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NASA CR-167937
MTI Report No. 80ASE142DR1

Automotive Stirling Engine Mod I Design Review Report

Volume III

(NASA-CR-167397) AUTOMOTIVE STIRLING ENGINE
MOD 1 DESIGN REVIEW, VOLUME 3 Final Report
(Mechanical Technology, Inc.) 362 p
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Mechanical Technology Incorporated



August 1982

Prepared for
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Lewis Research Center
Under Contract DEN 3-32 /

for
U.S. DEPARTMENT OF ENERGY
Conservation and Renewable Energy
Office of Vehicle and Engine R&D

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Volume III

Mechanical Technology Incorporated
968 Albany-Shaker Road
Latham, New York 12110

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Office of Vehicle and Engine R&D
Washington, D.C. 20545
Under Interagency Agreement DE-AI01-77CS51040

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C.1 Preliminary ASE Mod I Parts List (mainly BSE).

(NOTE: Present list does not cover all engine parts and some parts have not yet been given a detail number.)

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III-2

Stycklista · Parts List

Order	Part	Part Description	Quantity	Unit	Price	Total
1	1	External Heat System Assembly	1	EA	304.305	304.305
1	1	Heater Head Assembly	1	EA	303	303
4	1	Regenerator, Finish Machined	4	EA	302	1208
4	1	Gas Cooler Assembly	4	EA	301	1204
4	1	Retaining Plate	4	EA	209	836
8	1	Retainer Insert	8	EA	209	1672
8	1	Retainer Insert	8	EA	209	1672
36	1	Nut	36	EA	209	7524
1	1	Cylinder Block Assembly	1	EA	209	209
4	1	Piston & Piston Rod Assembly	4	EA	207	828
4	1	Piston Rod Seal Assembly	4	EA	208	832
1	1	Compressor Piston & Piston Rod Assembly	1	EA	207	207
1	1	Compressor Piston Rod Seal Assembly	1	EA	208	208
1	1	Check Valve & Gas Connection Assembly	1	EA	210	210
1	1	Engine Drive Assembly	1	EA	201-206	201-206

Basic Stirling Engine

ASE Mod 1

Group 200,300

Page 1 of 1

Order No. 1000

Page No. 1000

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Stycklista · Parts List

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Stycklista - Parts List

Tillstånd Rev. nr	Ändr. nr Rev. nr	Ändringsorder nr Rev. Spec. No	Ändringsbeskrivning Revision description	Datum Date	Sign	Godkänd Appr.
	△					
Antal Quant.	Plåtnings nr Formst. Size	Drägg nr Detail nr Detail no	Titel	Anmärkning Remarks		
	3	17120	Heater tube, Ass'y			
	3	17068	Heater tube, Ass'y			
	3	17118	Heater tube, Ass'y			
	3	17069	Heater tube, Ass'y			
	1	17038	Regenerator House, Ass'y	Machining		
	1	17036	Cylinder House, Ass'y	Machining		
	4	17162	Tube for thermocouple			
	4	17161	Sleeve for thermocouple			
	4	17160	Tube for thermocouple			
	3	17159	Tube for thermocouple, Ass'y			
	4	17163	Tube for thermocouple, Ass'y			
	4	17134	Boss			
	4	17135	Plug			
	4	17136	Plug			
1	3	17137	Gauge			
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			Heater Section, Ass'y		Uppgjord av Sign yh	Godkänd Approved
SELLER för/Valid for Engine Spec No			Grupp/Group 303		Sida nr/ant. Page no/total	Total Page total
MOD I III-11			Rätt format Draw. size 1	Stycklista nr Parts List no 17121		

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Tillaggs Rev. nr	Ändr. nr Rev. No.	Ändringsorder nr Rev. Spec. No.	Ändringsbeskrivning Revision description	Utgivnings Datum	Sign.	Godkänn Appr.
	⚠					
Antal Quanti	Plats nr Formel Sida	Drags nr Detail nr Detail no.	Titel	Anmärkning Remarks		
1	1	17045	Water Jacket Assembly			
4			O-Ring			
4			O-Ring			
4		17025	Duct Plate			
20		17108	Stud Bolt			
16	4	17109	Stud Bolt			
36	4	17122	Nut			
4			Cylinder Liner			
4			O-Ring			
4			Back-up Ring			
4			O-Ring			
4			O-Ring			
4			O-Ring			
4			Back-up Ring			
4			O-Ring			
4			Back-up Ring			
4	3	17111	Flange			
8	3	17114	Ring			
4	3	17110	Flange			
8	3	17113	Ring			

 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Titel	Uppgjord av	Sign.	Godkänd av
	Cylinder Block Assembly	Grupp	209	Blad nr / ant
	Blad nr / ant	Page no. / total		
Är giltig för	Rev. nr / ant	Stycklista nr	Parts List no.	Tillat Rev. nr
Engine Spec No	III-28			

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Teckens Rev. list	Ändr nr Rev. no.	Ändringsorder nr Rev. Spec. No.	Ändringsbeskrivning Revision description	Jakt Date	Sign	Godk Appr.
	⚠					
Antal Quan.	Form nr Form. no.	Drag nr Detail no.	Titel	Anmärkning Remarks		
1			Combustion Air Blower Assembly			
1			Variable Speed Drive Assembly			
1			Electric Blower Motor Assembly			
1			Atomizer Air Compressor Ass'y			
1			Pressure Relief Valve			
1			Toothed Belt			
1			Air Throttle Assembly			
1			Air Flow Meter			
1			Air Filter			
1			Fuel Supply Pump			
1			Fuel Pressure Regulator			
1			Fuel Filter			
1			Fuel Metering Pump			
1			Fuel Equalizer Valve			
1			Fuel Valve			
			Tubes			
			Hoses			
			Tube Fittings			
			Brackets			
			Bolts, etc.			
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			Titel Combustion Air and Fuel Systems Örder för/Valid for Engine Spec No 111-35	Utsigert Drawn Sign Grupp Group 402, 403, 404 Rev. Form Drag. data	Godkänd Approved Blad nr / gnr Page no. total Stycklista nr Parts List no.	Tillat Rev. tillat

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The following Engine Drive System Parts list
(Ricardo) is not yet transfered to USS' Standard
format.

Ricardo

INDEX OF SECTIONS				CLIENT UNIT: > STIRLING				PROJECT A.S.E. MOD 1.				SECT. NO. 1																											
												SHT. NO. 1																											
DATE OF ISSUE				1-2-80				A 3-3-80				B 3-3-80		C		D		E		F		G		H		J		K		NO. OF SHTS. 1									
SECTION																SECT. NO.		NO. OF SHTS		SECTION																SECT. NO.		NO. OF SHTS	
INDEX																1		1																					
CRANKCASE AND BEDPLATE																2		2																					
CRANKSHAFTS, OUTPUT SHAFT (GEARS)																3		2																					
CONNECTING ROD																4		1																					
OIL PUMP AND FILTER ASSY.																5		1																					
SUMP																6		2																					
HYDROGEN PUMP DRIVE																7		1																					
REAR END GEAR TIMING DRIVE																8		2																					
INTERCASING AND IDLER GEARS																9		1																					
WATER PUMP.																10		2																					
LINK ARRANGEMENT																11		1																					
CHAIN ARRANGEMENT																12		2		TO FOLLOW																			
MOTORING TEST PARTS																13		1																					
DYNAMIC BALANCING OF CRANKSHAFTS																14		2																					
SAFETY CLUTCH DRIVE																15		2																					
ENGINE/CLUTCH HOUSING MOUNTING BKT'S																16		1																					

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PARTS LIST		CLIENT UNITED STIRLING PROJECT A.S.E MOD 1.										SECT. NO. 2
SECTION		CRANKCASE AND BEDPLATE										SHT. NO. 1
DATE OF ISSUE	1-2-80	A	B	C	D	E	F	G	H	J	K	NO. OF SHTS. 2
LINE DRG. NO. SIZE	RICARDO DRG. NO.	U.S.S. PART NO.	DESCRIPTION OF PART					NO. OFF PER UNIT	MATERIAL & REMARKS			
1	3274-108	61108	CRANKCASE/BEDPLATE ASSY					1	PARTS LIST DRG. N° 61206			
2	3274-116	61116	CRANKCASE					1				
3	3274-117	61117	BEDPLATE					1				
4	3274-164	61164	STUD-CRANKCASE TO BEDPLATE					12				
5	3274-199	61199	NUT M12					12				
6	3274-134	61134	WASHER M12					12				
7			BOLT M8 x 40 LONG					5				
8			BOLT M8 x 45 LONG					2				
9			WASHER M8					7				
10	3274-136	61136	RING DOWEL Ø 12 x 9					2	(BEDPLATE - CRANKCASE)			
11	3274-137	61137	RING DOWEL Ø 12 x 12					2	(INTERCASING - CRANKCASE)			
12			GRUB SCREW M6-1 x 6					1	(CRANKCASE - INTERCASING)			
13												
14	3274-180	61180	OIL JET					1				
15			LOCKNUT M8					1				
16												
17			GRUB SCREW M12-1.75x10					1	(MAIN OIL GALLERY)			
18												
19			WIRE THREAD INSERT M14-2 x 1.50					16	(C'CASE TOP DECK STUDS)			
20			WIRE THREAD INSERT M8-1.25 x 1.50					4	(HYDROGEN PUMP STUDS)			

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PARTS LIST		CLIENT <u>UNITED STIRLING</u>		PROJECT <u>A.S.E. MOY 1</u>		SECT. NO. <u>2</u>						
SECTION		CRANKCASE AND BEDPLATE						SHT. NO. <u>2</u>				
DATE OF ISSUE	<u>1-2-80</u>	A	B	C	D	E	F	G	H	J	K	NO. OF SHTS. <u>2</u>
LINE NO.	DRG. NO.	RICARDO	U.S.S.	PART NO.				DESCRIPTION OF PART	NO. OFF PER UNIT	MATERIAL & REMARKS		
1	3274-138	61138						SEAL	1	DPSM 24357 - GACO		
2	3274-135	61135						BEARING BUSH OUTPUT SHAFT FRONT END	1	B.O. GLACIER 2830 M		
3												
4												
5	3274-215	61215						CUP PLUG	1	B.O. TYLERS - 1970-50		
6												
7												
8												
9												
10												
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PARTS LIST		CLIENT		UNIT D STIP'ING PROJECT										A.S.E. MOD 1		DELI. NO. 3											
SECTION		CRANKSHAFT, OUTPUT SHAFT AND MAIN BEARINGS (GEARS)														SHT. NO. 1											
DATE OF ISSUE		1-2-80		A		B		C		D		E		F		G		H		J		K		NO. OF SHTS. 2			
LINE ORG. NO. SIZE		RICARDO DRG. NO.		DSS PART NO.		DESCRIPTION OF PART										NO. OFF PER UNIT		MATERIAL & REMARKS									
1																		PARTS LIST DRG. N° 61202									
2		3274-112		61112		CRANKSHAFT (CYL N° 1 & N° 2)										1											
3						DOWEL Ø 6 x 16										1		B.O. BONEHAM & TURNER LTD.									
4		3274-152		61152		DRIVE PEG - OIL PUMP										1											
5																											
6		3274-113		61113		CRANKSHAFT (CYL N° 3 & N° 4)										1											
7						DOWEL Ø 6 x 16										1		B.O. BONEHAM & TURNER LTD.									
8																											
9		3274-147		61147		REAR BRG. HSG. ASSY.										1		PARTS LIST DRG. N° 61193									
10		3274-145		61145		BEARING HOUSING-REAR										1											
11		3274-146		61146		BUSH SMALL-REAR HOUSING										1											
12		3274-141		61141		BUSH LARGE-REAR HOUSING										1											
13						CAP SCREW M6-1 x 15 LG.										3											
14																											
15		3274-109		61009		MAIN BEARING (HALF)										12		B.O. VANDERVELL LTD.									
16		3274-110		61110		THRUST WASHER										4		B.O. VANDERVELL LTD.									
17																											
18		3274-144		61114		MAIN DRIVE SHAFT										1											
19																											
20																											

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PARTS LIST		CLIENT <u>UNITED STEELING</u>		PROJECT <u>A.S.E. MOD 1</u>		SECT. NO. <u>3</u>						
SECTION		CRANKSHAFT, OUTPUT SHAFT AND MAIN BEARINGS						SHT. NO. <u>2</u>				
DATE OF ISSUE	<u>1-2-80</u>	A	B	C	D	E	F	G	H	J	K	NO. OF SHTS. <u>2</u>
LINE ORG. NO. SIZE	RICARDO DRG. NO.	PART NO.	DESCRIPTION OF PART				NO. OFF PER UNIT	MATERIAL & REMARKS				
1												
2		3274-224	G1224				LINK WEIGHT ASSY	4				
3							CAP BOLTS - M6x25 LONG	8				
4												
5												
6												
7												
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PARTS LIST		CLIENT <u>UNITED STirling</u>		PROJECT <u>A.S.E. MOD 1</u>		SECT. NO. <u>4</u>						
SECTION		CONNECTING ROD - POWER PISTON						SHT. NO. <u>1</u>				
DATE OF ISSUE	<u>1-2-80</u>	A	B	C	D	E	F	G	H	J	K	NO. OF SHTS. <u>1</u>
LINE NO.	DWG. NO.	PART NO.		DESCRIPTION OF PART				NO. OFF PER UNIT	MATERIAL & REMARKS			
1									PARTS LIST DRC N° 61201			
2	3274-104	61104						4	CONNECTING ROD ASSY.			
3	3274-101	61101						1	CONNECTING ROD			
4	3274-107	61107						2	SMALL-END BUSH			
5	3274-118	61118						2	BIG END BEARING (HALF)			
6	3274-102	61102						2	BOLT - CONN. ROD			
7	3274-103	61103						2	NUT - CONN. ROD			
8	3274-106	61106						1	SMALL - END PIN			
9								2	CIRCLIP			
10									B.S.S. 3.0. 20M. (11m, 20M)			
11												
12												
13												
14												
15												
16												
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18												
19												
20												

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PARTS LIST														SECT. NO.	5
SECTION OIL PUMP AND FILTER ASSEMBLY.														SHT. NO.	1
DATE OF ISSUE 1-2-80 A 3-3-80 B C D E F G H J K														NO. OF SHTS.	1
LINE NO.	DRG. NO.	RICARDO DRG. NO.	PART NO.	DESCRIPTION OF PART					NO. OFF PER UNIT	MATERIAL & REMARKS					
1		3274-149	61149						1	LUBRICATION SYSTEM DRG. N° 61204					
2									3						
3									1						
4									4						
5									1	UNBRAKO					
6									2						
7		3274-150	61150						1						
8															
9		3274-151	61151						1						
10		3274-163	61163						1	B.O. PUROLATOR TYPE.					
11															
12		3274-148	61148						1	B.O. CONCENTRIC PUMPS.					
13									3						
14															
15															
16															
17															
18															
19															
20															

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PARTS LIST																		CLIENT UNITED STIRLING PROJECT A.S.E. MOD I.										SECT. NO. 6	
SECTION SUMP & SUCTION PIPE																												SHT. NO. 1	
DATE OF ISSUE		1-2-80		A		3-3-80		B		7-3-80		C		D		E		F		G		H		J		K		NO. OF SHTS. 2	
LINE DRG. NO. SIZE		RICARDO DRG. NO.		USS PART NO.		DESCRIPTION OF PART										NO. OFF PER UNIT		MATERIAL & REMARKS											
1		3274-119		61119		SUMP										1		LUBRICATION SYSTEM PARTS LIST DRG. N° 61204 SHEET 2											
2						BOLT M8 x 20										10													
3						BOLT M8 x 80										6													
4						WASHER M8										16													
5		3274-120		61120		GASKET - SUMP										1													
6		3274-186		61186		PLUG - 1/2" B.S.P. - DRAIN										1		B.O. ENOTS (PART N° 34 0276 04)											
7		3274-187		61187		JOINT RING										1		B.O. ENOTS (PART N° 48 0213 04)											
8																													
9		3274-188		61188		PLUG - 1" BSP OIL HEATER										1		B.O.F.											
10		3274-189		61189		JOINT RING DOWTY										1		B.O.F.											
11																													
12		3274-209		61209		DIPSTICK ASSY										1		} U.S.S. SUPPLY											
13		3274-207		61207		DIPSTICK BLADE										1													
14		3274-208		61208		DIPSTICK COLLAR										1													
15		3274-210		61210		O'RING										1													
16																													
17																													
18																													
19																													
20																													

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PARTS LIST		CLIENT		UNITED STIRLING		PROJECT		A.S.E. MOD 1		SECT. NO. 6	
SECTION		SUMP & SUCTION PIPE								SHT. NO. 2	
DATE OF ISSUE		1-2-80		A 7-3-80		B		C		D	
LINE DRG. NO. SIZE		RICARDO DRG. NO.		PART NO.		DESCRIPTION OF PART		NO. OFF PER UNIT		MATERIAL & REMARKS	
1											
2		3274-211		61211		SUCTION PIPE ASSEMBLY		1		PARTS LIST DRG. N° 61241	
3											
4		3274-184		61184		SUCTION PIPE		1			
5		3274-223		61223		COLLAR - O'RING		1			
6		3274-212		61212		CLIP		1			
7		3274-213		61213		HOUSING - STRAINER		1			
8											
9		3274-185		61185		STRAINER					
10				300-44M		CIRCLIP				B.O. ANDERTON	
11		3274-217		61217		O'RING				B.O. GACO - RM 0146-24	
12											
13						SETBOLT - M6x10 LONG		1			
14											
15											
16											
17											
18											
19											
20											

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PARTS LIST UNITED STIRLING ENGINE A.S.E. MOD 1													SECT. NO. 7	
SECTION HYDROGEN PUMP DRIVE.													SHT. NO. 1	
DATE OF ISSUE	1-2-80	A	B	C	D	E	F	G	H	J	K		NO. OF SHTS. 1	
LINE NO.	DRG. NO.	RICARDO DRG. NO.	USS PART NO.	DESCRIPTION OF PART								NO. OFF PER UNIT	MATERIAL & REMARKS	
1		3274-165	61165										1	PARTS LIST DRG. N° 61200
2		3274-114	61114										1	CONNECTING ROD - HYDROGEN PUMP
3		3274-143	61143										2	SMALL-END BUSH
4		3274-138	61138										2	BIG-END BEARING (HALF)
5		3274-178	61178										2	BIG-END STUD
6													2	BIG-END NUT-M8
7		3274-179	61179										1	SLIPPER PIN
8													2	CIRCLIP
9														
10														
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UNITED STIRLING FUEL A.S.E. MOD 1.														SECT. NO. 8
SECTION REAR END GEAR TIMING DRIVE (ALTERNATIVES)														SHT. NO. 1
DATE OF ISSUE	1-2-80	A	53808		C	D	E	F	G	H	J	K		NO. OF SHTS. 2
LINE NO.	DRG. NO.	RICARDO DRG. NO.	PART NO.	DESCRIPTION OF PART						NO. OFF PERIOD	MATERIAL & REMARKS			
1		3274-169	61169							2	O.8 MODULE			
2										10	CAP SCREW M8-1.25x16			
3										2	DOWEL Ø6 x 16			
4														
5		3274-168	61168							1	GEAR - DRIVE SHAFT			
6										4	O.8 MODULE			
7										2	CAPSCREW M6-1 x 20			
8											DOWEL Ø5 x 12			
9											B.O. BONEHAM & TURNER LTD.			
10		3274-167	61167							2				
11										10	GEAR - CRANKSHAFT			
12										2	CAP SCREW M8-1.25x16			
13											DOWEL Ø6 x 16			
14		3274-166	61166							1	B.O. BONEHAM & TURNER LTD.			
15										4				
16										2	GEAR - DRIVE SHAFT			
17											CAP SCREW M6-1 x 20			
18											DOWEL Ø5 x 12			
19											B.O. BONEHAM & TURNER LTD.			
20														

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RICARDO
CORP. - A Time Corporation

PARTS LIST		CLIENT LIMITED, TIRLING		PROJECT A.S. - MOD 1.		SECT. NO. 8								
SECTION		REAR END GEAR TIMING DRIVE (ALTERNATIVES)						SHT. NO. 2						
DATE OF ISSUE		5-20	A	B	C	D	E	F	G	H	I	J	K	NO. OF SHTS. 2
LINE NO.	DWG. NO.	RICARDO DWG. NO.	PART NO.	DESCRIPTION OF PART						NO. OFF PER UNIT	MATERIAL & REMARKS			
1		3274-234	61234							1	CRANKSHAFT 1 & 2 cyl.			
2										1	CAP SCREW MB-1.25x16L			
3														
4														
5		3274-235	61235							1	CRANKSHAFT 3 & 4 cyl.			
6										1	CAP SCREW MB-1.25x16L			
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
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PARTS LIST		CLIENT	UNITED STEELING				PROJECT	A.S.E. MOD 1				SECT. NO.	9												
SECTION		INTERCASING											SHT. NO.	1											
DATE OF ISSUE		1-2-80	A	7-3-80	B		C		D		E		F		G		H		J		K		NO. OF SHTS.	1	
LINE	DRG. NO. SIZE	RICARDO DRG. NO.	PART NO.		DESCRIPTION OF PART										NO. OFF PER UNIT	MATERIAL & REMARKS									
1		3274-121	61121												1	INTERCASING/IDLER PARTS LIST DRG. NO. 61125									
2		3274-190	61190												1	DPSM 2512012									
3															8										
4		3274-122	61122												1										
5																									
6		3274-192	61192												1	CEANDESS LTD. P2289									
7		3274-191	61191												1	CEANDESS LTD. 186									
8																									
9																									
10		3274-174	61174												1	3600 r.p.m. ALT. BUILD.									
11		3274-197	61197												1	3100 r.p.m.									
12		3274-171	61171												1	3600 r.p.m. ALT. BUILD									
13		3274-170	61170												1	3100 r.p.m.									
14		3274-140	61140												2										
15																									
16		3274-142	61142												1										
17															2										
18															1	RM 0271 -16									
19															1	RM 0071 -16									
20																									

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PARTS LIST																		UNITED STIRLING PROJECT																		A.S.E. MOD 1.																		SECT. NO. 10	
SECTION WATER PUMP.																		SHT. NO. 1																																					
DATE OF ISSUE		1-2-80		A		7-3-80		B		C		D		E		F		G		H		J		K		NO. OF SHTS. 2																													
LINE DRG. NO. SIZE		RICARDO DRG. NO.		PART NO.		DESCRIPTION OF PART												NO. OFF PER UNIT		MATERIAL & REMARKS																																			
1		3274-182		61182		WATER PUMP ASSEMBLY												1		PARTS LIST DRG. N° 61194																																			
2		3274-123		61123		WATER PUMP BODY												1																																					
3		3274-125		61125		WATER PUMP SHAFT												1																																					
4		3274-130		61130		SEAL												1		PR. 15.35.12. (USS SUPPLY)																																			
5						BEARINGS												1		SKF TYPE 3203 (40x17x17.5)																																			
6						CIRCLIP												1		ANDERTON DIN 1300 - 40																																			
7		3274-173		61173		GEAR-WATER PUMP (13IT)												1		3600 r.p.m. ALT. BUILD.																																			
8		3274-172		61172		GEAR-WATER PUMP (153T)												1		3100 r.p.m.																																			
9		3274-196		61196		GEAR HUB-WATER PUMP SHAFT												1																																					
10		3274-127		61127		IMPELLER HUB ASSY.												1																																					
11		3274-126		61126		IMPELLER HUB												1																																					
12		3274-128		61128		IMPELLER												1		SUPPLIED BY USS																																			
13		3274-181		61181		FACE RING												1																																					
14																																																							
15		3274-198		61198		OIL SEAL - DP 16307												1		BO GACO																																			
16						CIRCLIP												1		ANDERTON 1400-17																																			
17																																																							
18		3274-129		61129		RUBBING FACE												1		LAR 16-38-6 (USS SUPPLY)																																			
19						CAP SCREW M6 x 16												6																																					
20						WASHER M6												6																																					

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PARTS LIST										CLIENT UNITED STIRLING										PROJECT A.S.E. MOD 1.										SECT. NO. 10	
SECTION WATER PUMP																				SHT. NO. 2											
DATE OF ISSUE		1-2-80		A		B		C		D		E		F		G		H		J		K		NO. OF SHTS. 2							
LINE NO.	DRG. NO.	RICARDO DRG. NO.	PART NO.	DESCRIPTION OF PART										NO. OFF PER UNIT	MATERIAL & REMARKS																
1																															
2		3274-131	61131	WATER PUMP BODY GASKET										1																	
3				BOLT M6 x 25 LG.										2																	
4				BOLT M6 x 60 LG.										1																	
5				WASHER M6										3																	
6																															
7				BOLT M6 x 16 - PUMP DRAIN										1																	
8				WASHER M6										1																	
9																															
10		3274-124	61124	WATER PUMP INLET PIPE										1																	
11		3274-132	61132	WATER PUMP INLET PIPE GASKET										1																	
12				BOLT M6 x 25 LG.										6																	
13				WASHER M6										6																	
14																															
15																															
16																															
17																															
18																															
19																															
20																															

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RICARDO <small>Consulting Engineers</small>		PARTS LIST		CLIENT NITEC STIRLING		PROJECT ASE MOD		SECT. NO. 13																				
		SECTION		MOTORING TEST PARTS						SNT. NO. 1																		
		DATE OF ISSUE		3-3-80		A	5	3	8	B		C		D		E		F		G		H		I		J		K
LINE NO.	ORG. SIZE	RICARDO ORG. NO.	PART NO.	DESCRIPTION OF PART		NO. OFF PER UNIT		MATERIAL & REMARKS																				
1		3274-154	61154		RECIP. MASS - FOWER PISTON	4																						
2		3274-153	61153		LINER - POWER PISTON	4																						
3																												
4		3274-157	61157		LOCATING FLATE	1																						
5					SETBOLT - M14 x 40 LG.	4																						
6																												
7		3274-156	61156		RECIP. MASS - HYD. PUMP	1																						
8		3274-155	61155		LINER - HYD. PUMP.	1																						
9																												
10					SETBOLT. - LINER TO																							
11					CRANKCASE MB x 20 LG.	4																						
12																												
13					BLANKING PINS FOR																							
14					OIL HOLES IN C'CASE																							
15					Ø 2,5 x 12 LG.	4																						
16																												
17		3274-161			BALANCE WEIGHT FRONT	1		- DRIVE SHAFT																				
18					KEY 6 x 6 x 55	1																						
19					BOLT - MB - 1.25 x 20 LG	1																						
20																												

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PARTS LIST		CLIENT		UNITED STirling		PROJECT		A.S.E. MOD 1		SECT. NO. 14	
SECTION DYNAMIC BALANCING OF CRANKSHAFTS										SHT. NO. 1	
DATE OF ISSUE		1-2-80		A		B		C		D	
E		F		G		H		I		J	
K										NO. OF SHTS. 2	
LINE NO.	DRG. NO.	RICARDO	PART NO.	DESCRIPTION OF PART				NO. OF PERMITS	MATERIAL & REMARKS		
1				CRANKSHAFT - N°1 & 2 CYLINDERS							
2	3274-225			BALANCE WEIGHT - FRONT				1			
3				BOLT M10 x 30 LONG				1			
4				DOWEL - $\phi 6$ x 15 LONG				1	BONEHAM & TURNER LTD		
5											
6	3274-226			BALANCE WEIGHT - REAR				1			
7				BOLT - M8 x 25 LONG				2			
8				DOWEL - $\phi 6$ x 15 LONG				1	BONEHAM & TURNER LTD		
9											
10	3274-224			LINK WEIGHT ASSY				2			
11				CAP BOLTS - M6 x 25 LONG				4			
12											
13											
14											
15											
16											
17											
18											
19											
20											

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PARTS LIST		CLIENT	UNITED STIRLING										PROJECT	ASE MOD 1					SECT. NO.	14		
SECTION		DYNAMIC BALANCING OF CRANKSHAFT.																	SHT. NO.	2		
DATE OF ISSUE	1-2-80	A		B		C		D		E		F		G		H		J		K	NO. OF SHTS.	2
LINE ORG. NO. SIZE	RICARDO DRG. NO.	PART NO.		DESCRIPTION OF PART												NO. OFF PER UNIT	MATERIAL & REMARKS					
1																						
2																						
3		3274-227																				
4																						
5																						
6																						
7		3274-228																				
8																						
9																						
10		3274-224																				
11																						
12																						
13		3274-229																				
14																						
15																						
16																						
17																						
18	*	3274-232																				
19																						
20																						

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PARTS LIST															CLIENT	UNITED STIRLING					PROJECT	A.S.E MOD 1					SECT. NO. 15	
SECTION SAFETY - CLUTCH DRIVE																									SHT. NO. 1			
DATE OF ISSUE		1-2-80		A	5-3-80		B		C		D		E		F		G		H		J		K		NO. OF SHTS. 2			
LINE NO.	DRG. NO.	RICARDO DRG. NO.		PART NO.		DESCRIPTION OF PART										NO. OFF PER UNIT	MATERIAL & REMARKS											
1																												
2		3274-222		61222		FLYWHEEL										1												
3						STARTER RING										1	SUPPLIED - UNITED STIRLING											
4						BOLTS - FLYWHEEL										8	M8 x 25 LONG											
5						PLAIN WASHER										8												
6																												
7		3274-221		61221		BEARING - DRIVESHAFT										1												
8																												
9																												
10		3274-230		61230		CLUTCH PLATE ASSY										1	AP BORG & BECK 8" HB N° 1663											
11		3274-231		61231		CLUTCH D.S. ASSY										1	AP BORG & BECK 8" 8 1/2" N° 76601/11											
12																												
13						SETBOLTS - CLUTCH										6	M8 x 20 LONG											
14						PLAIN WASHER										6	M8											
15						DOWEL 1/4" x 3/4" LONG										2	BONEHAM & TURNER LTD											
16																												
17		3274-233		61233		BALANCE WEIGHT - FLYWHEEL										1												
18						SET BOLT - M6 x 25 LG.										2												
19																												
20																												

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PARTS LIST													CLIENT	UNITED STIPLING				PROJECT	A.S.E. MOD 1				SECT. NO. 15				
SECTION													SAFETY - CLUTCH DRIVE													SHT. NO. 2	
DATE OF ISSUE		1-2-80		A		B		C		D		E		F		G		H		J		K	NO. OF SHTS. 2				
LINE	DRG. NO. SIZE	RICARDO DRG. NO.		PART NO.		DESCRIPTION OF PART										NO. OFF PER UNIT	MATERIAL & REMARKS										
1																											
2		3274-219	61219																								
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											
13																											
14																											
15																											
16		3274-220	61220																								
17																											
18																											
19																											
20																											

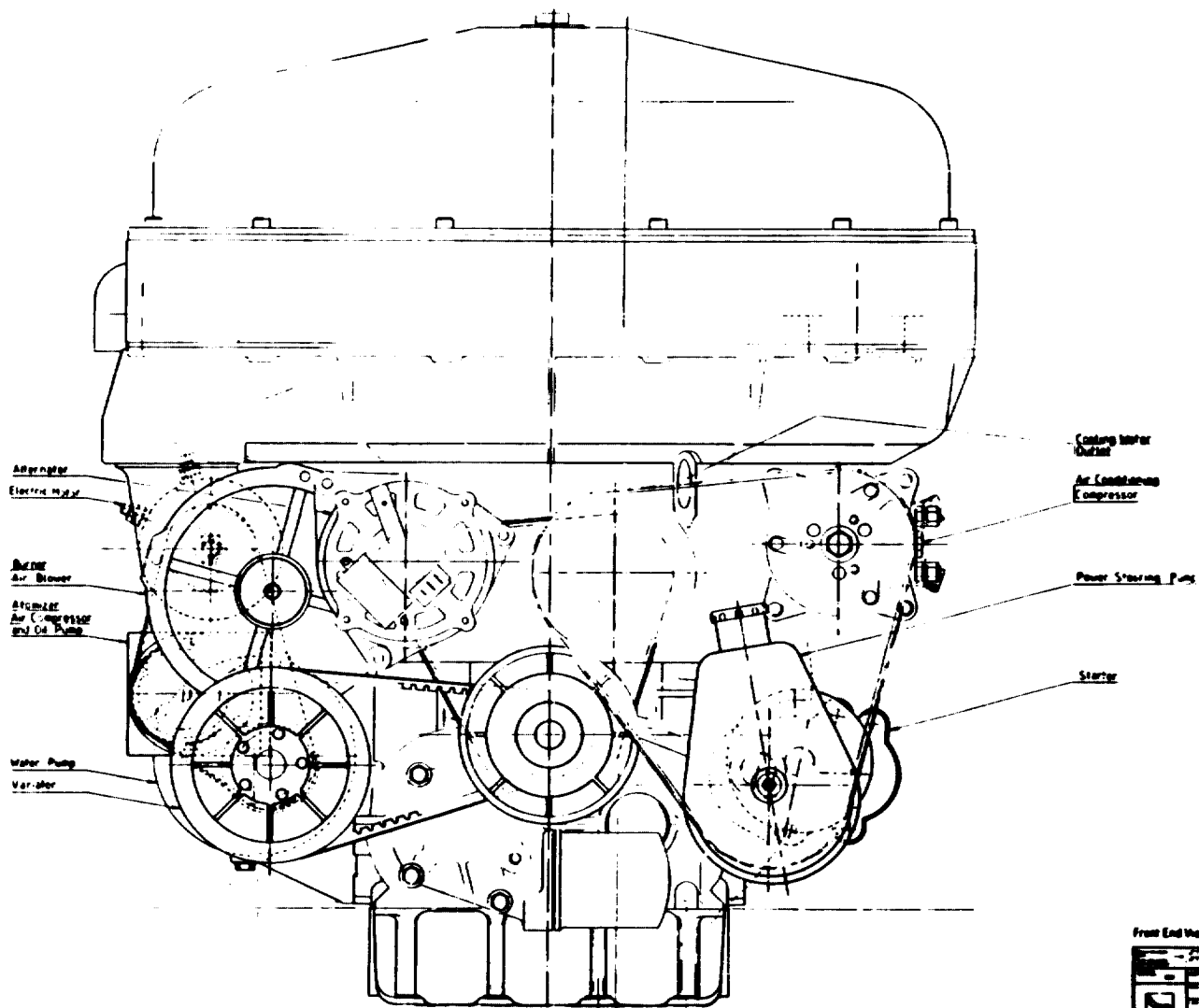
09-III

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Stirling Engine System

C.2 Drawings - Update

0 - 17150 Stirling Engine System, ASE Mod I
(3 sheets)

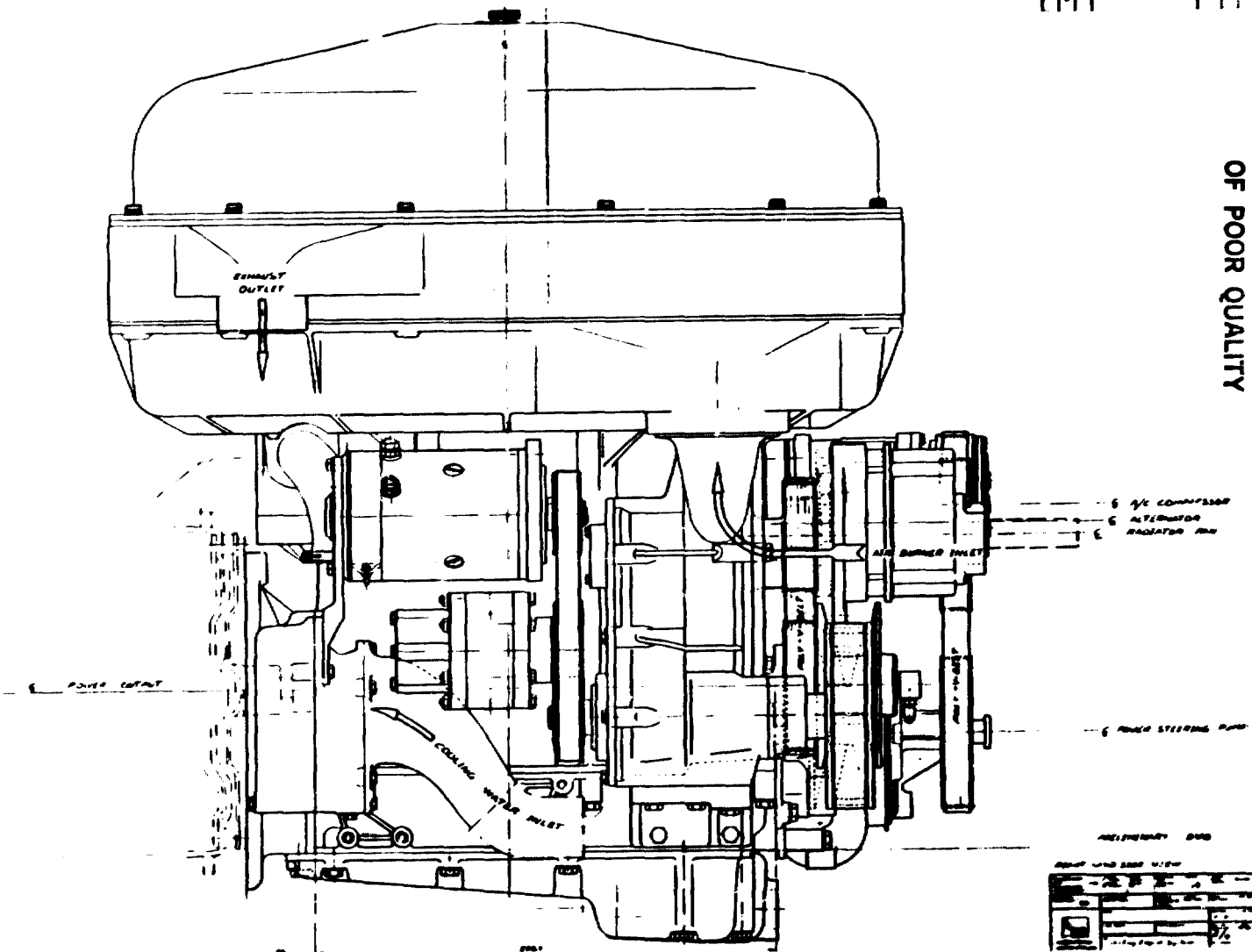


Front End View - Preliminary 3-67

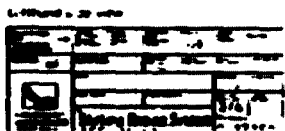
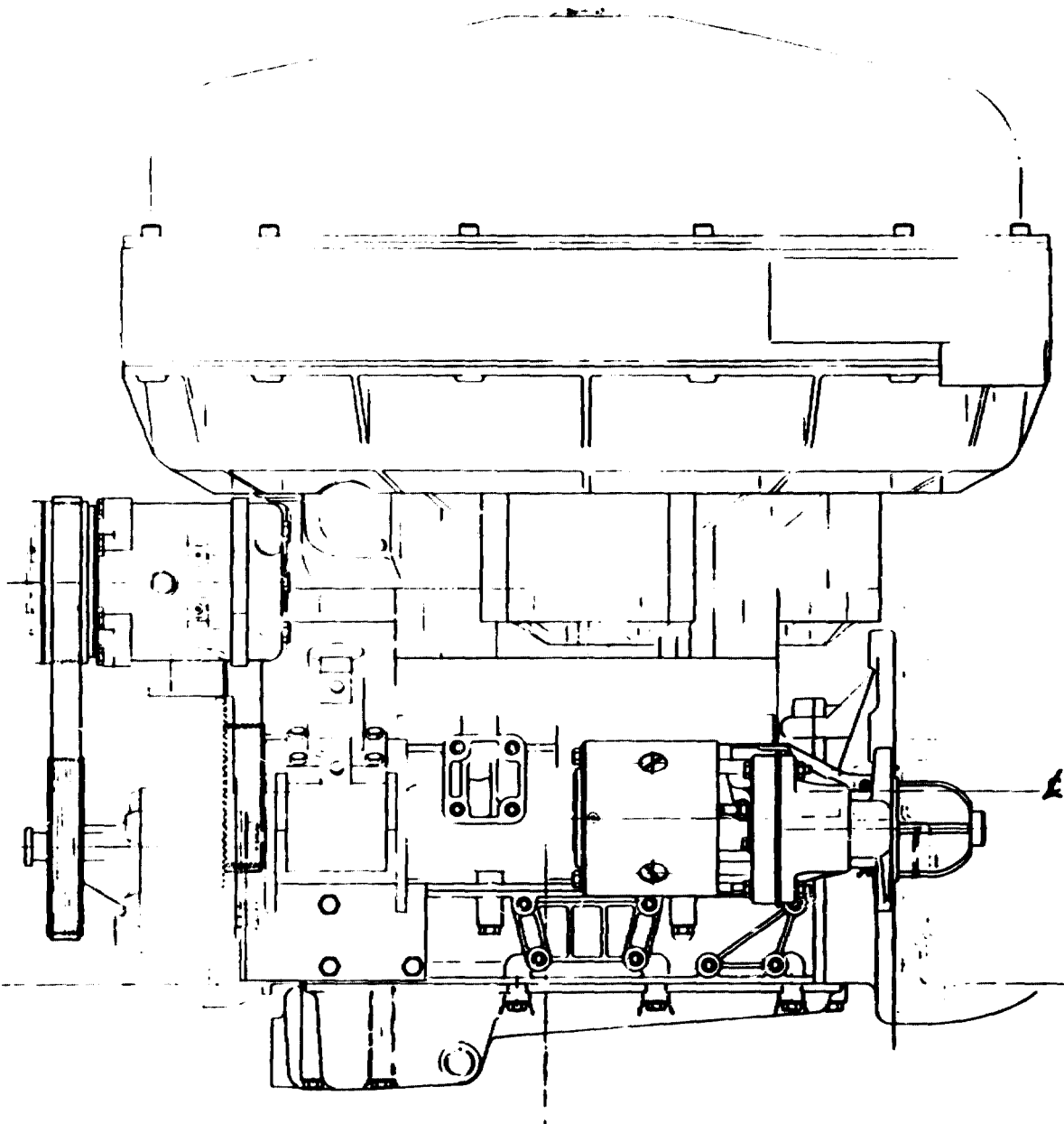
Item	Part	Qty	Notes
1	Stirling Engine System	1	
2	Alternator	1	
3	Electric Motor	1	
4	Recirculating Air Blower	1	
5	STOKES Air Compressor and Oil Pump	1	
6	Water Pump	1	
7	Water	1	
8	Cooling Water Outlet	1	
9	Air Conditioning Compressor	1	
10	Power Steering Pump	1	
11	Starter	1	

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Drawings

ASE Mod I, SES-drawings (preliminary layouts)

0-17030 Stirling Engine System ASE Mod I

- sheet 1: Right Side**
- sheet 2: Left Side**
- sheet 3: Front view**

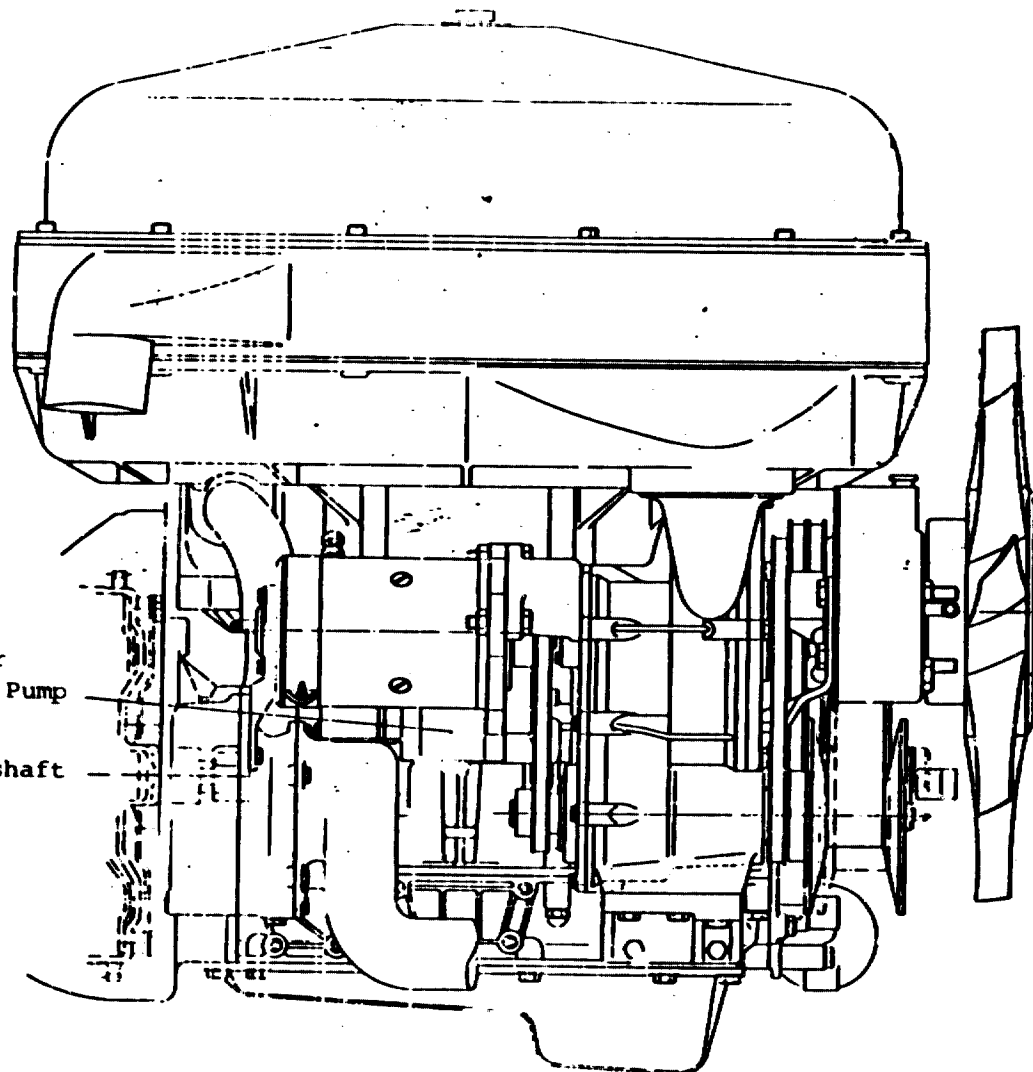
0-17039 Top View Sketch

**Note: The starter has been drawn wrong, too close to the crank-
case assembly!**

99-111

Atomizer Air
Compressor Oil Pump

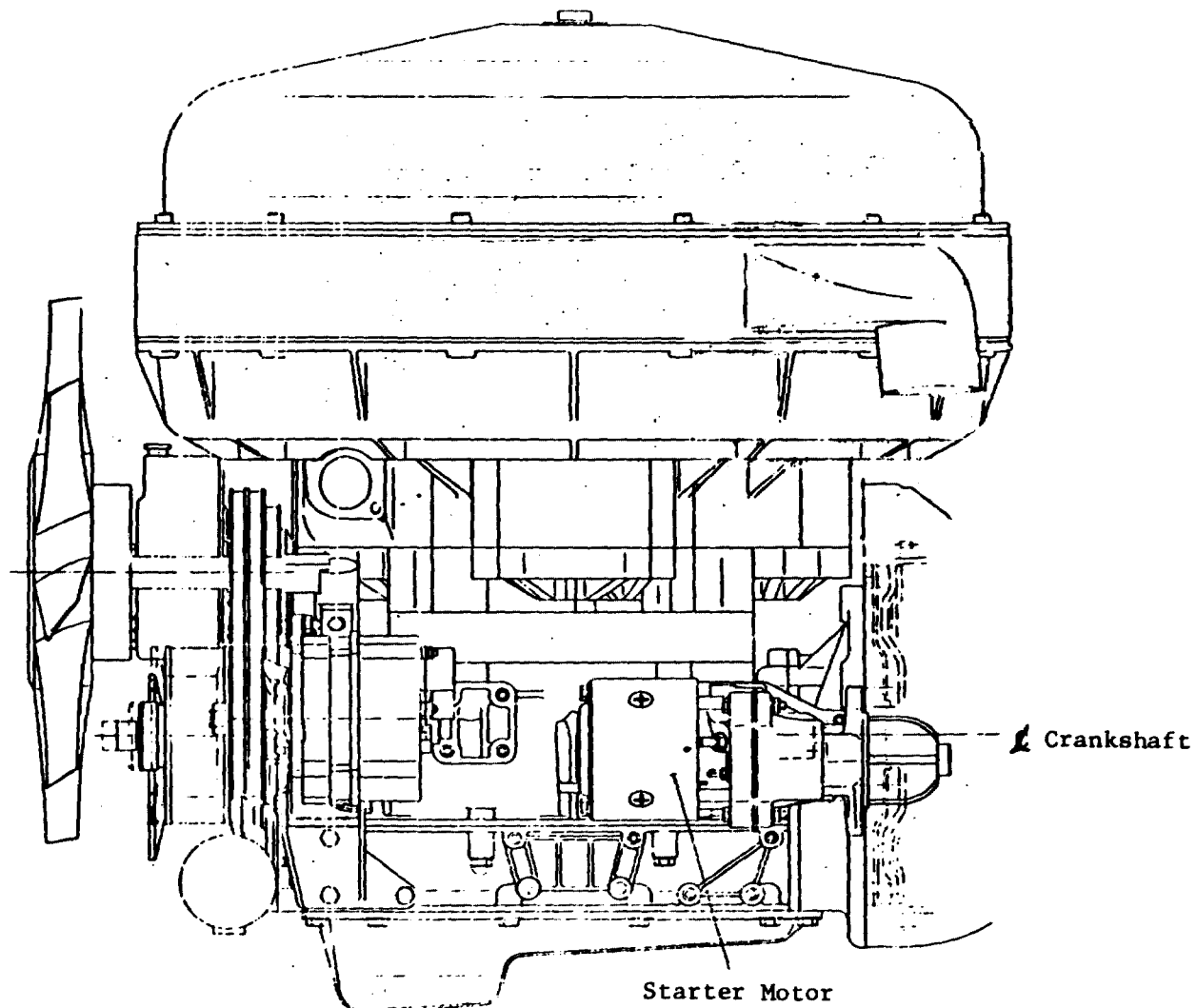
Crankshaft



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Preliminary Drawing
O-17030, Sheet 1

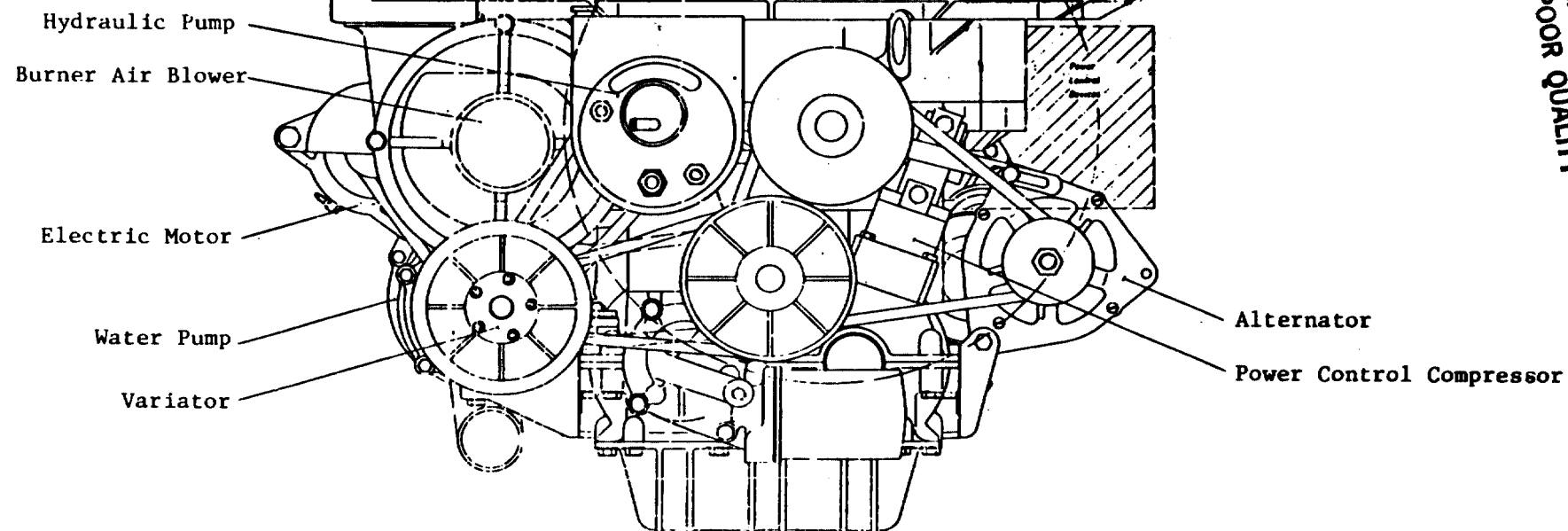
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Preliminary Drawing
0-17030, Sheet 2

III-67

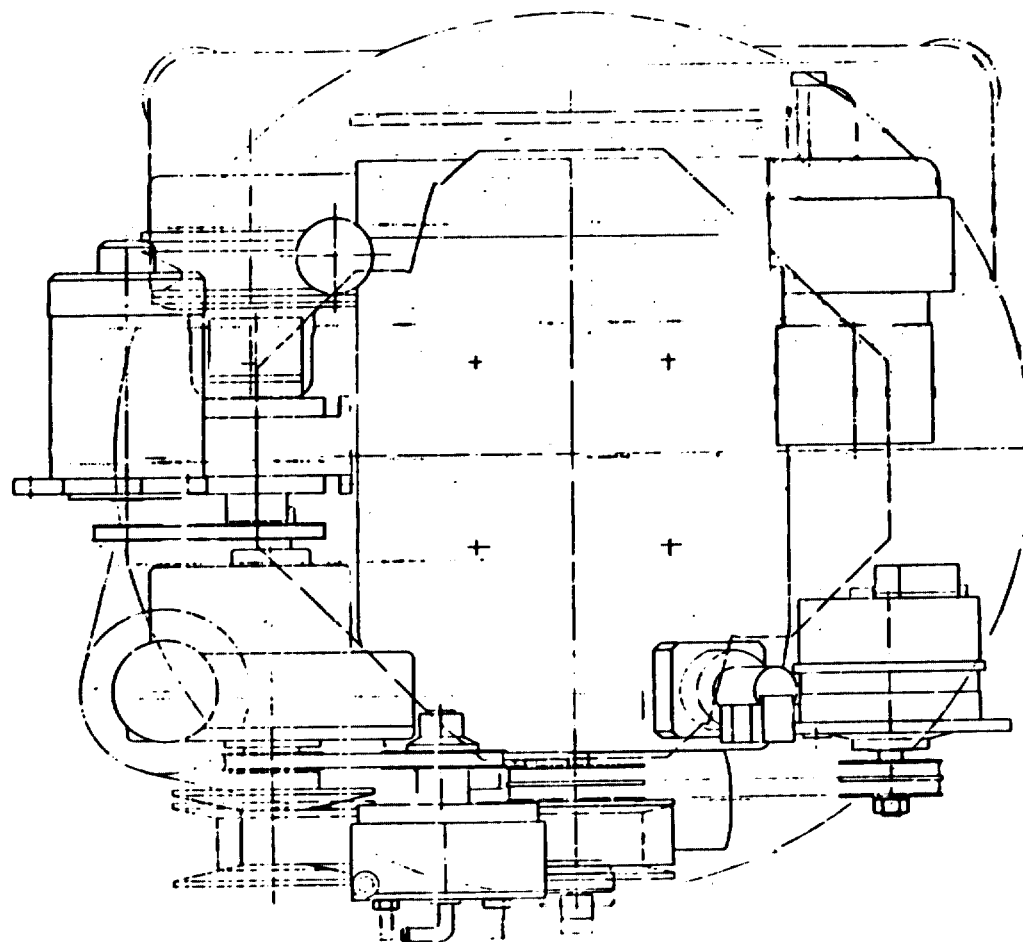
89-111



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Preliminary Drawing
O-17030, Sheet 3

III-69

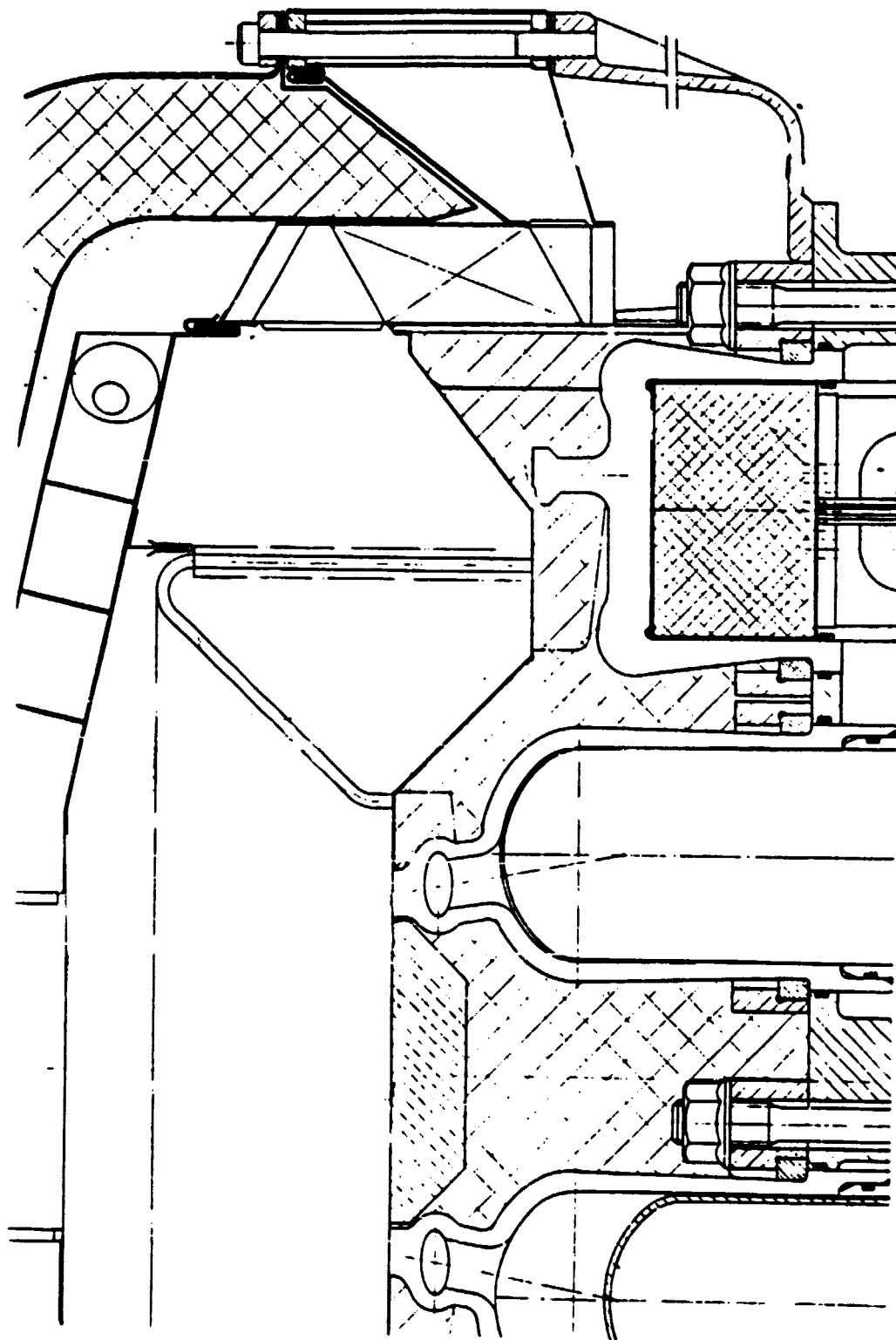


Top View Sketch, ASE Mod I

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Preliminary Dwg.
0-17039

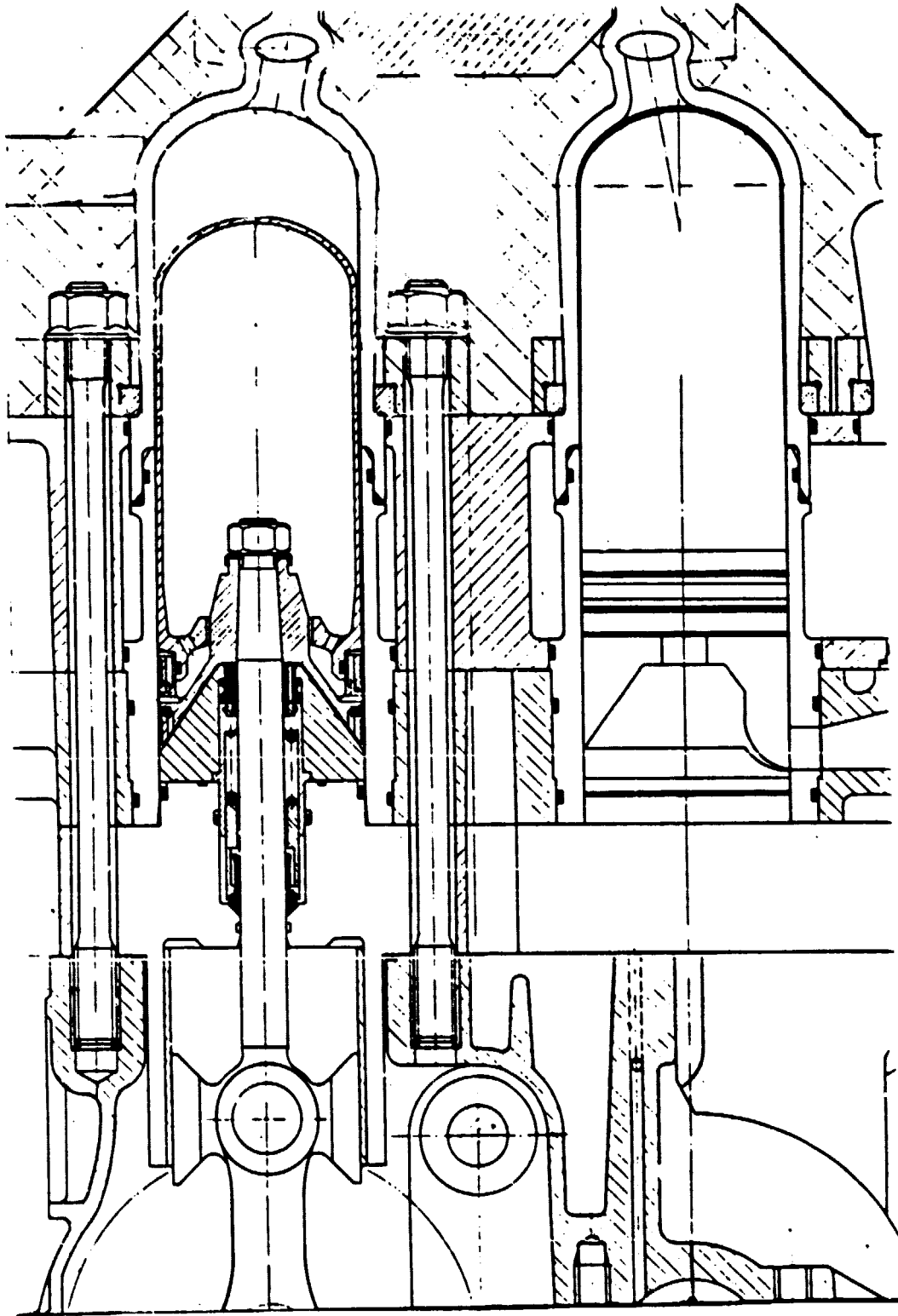
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Basic SE Layout, Sheet 1

III-70

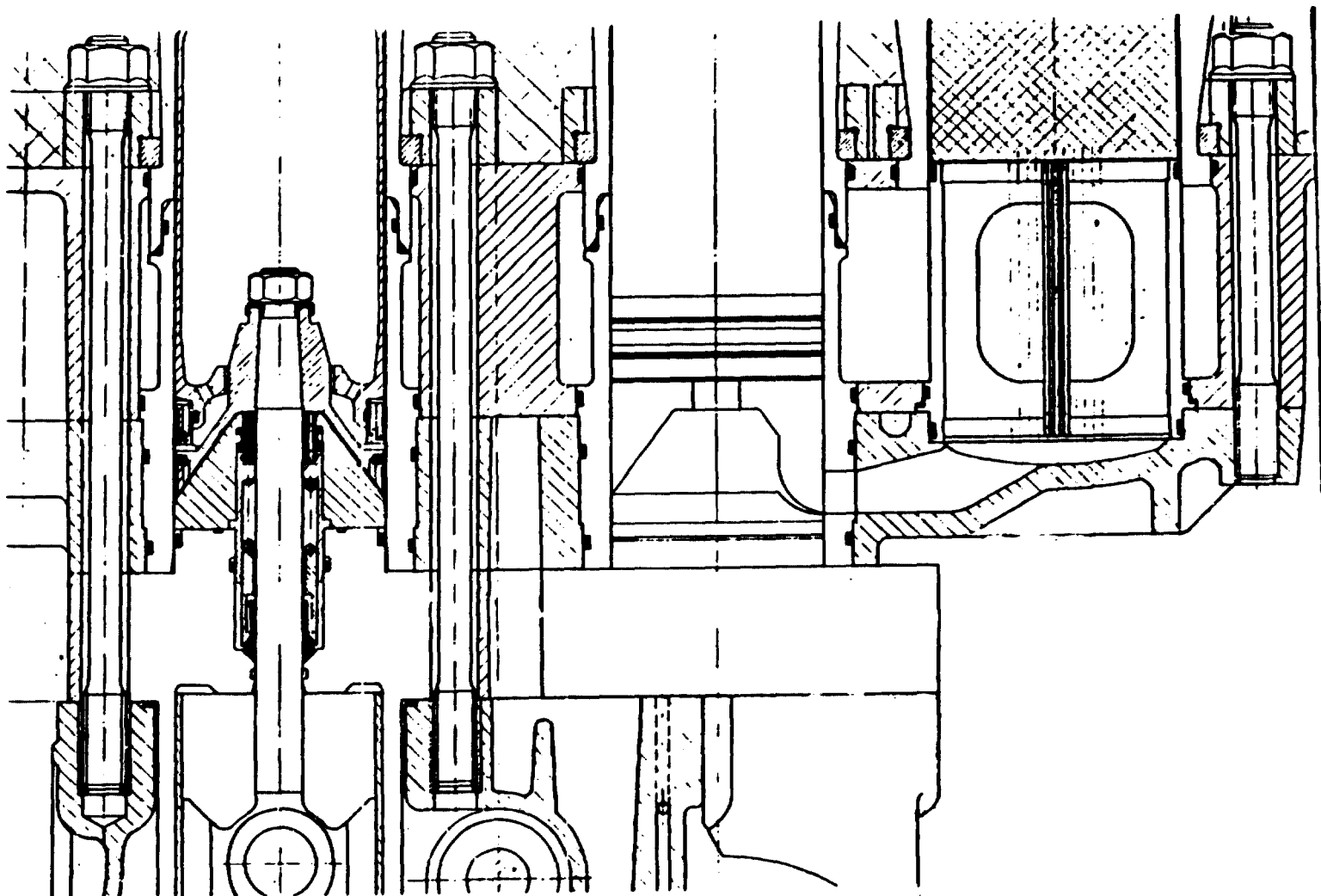
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Basic SE Layout, Sheet 2

III-71

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Basic SE Layout, Sheet 3

Basic Stirling Engine

C.3 Drawings - Update

Earlier BSE drawings have not been updated, but will be replaced later by assemblies.

3.2

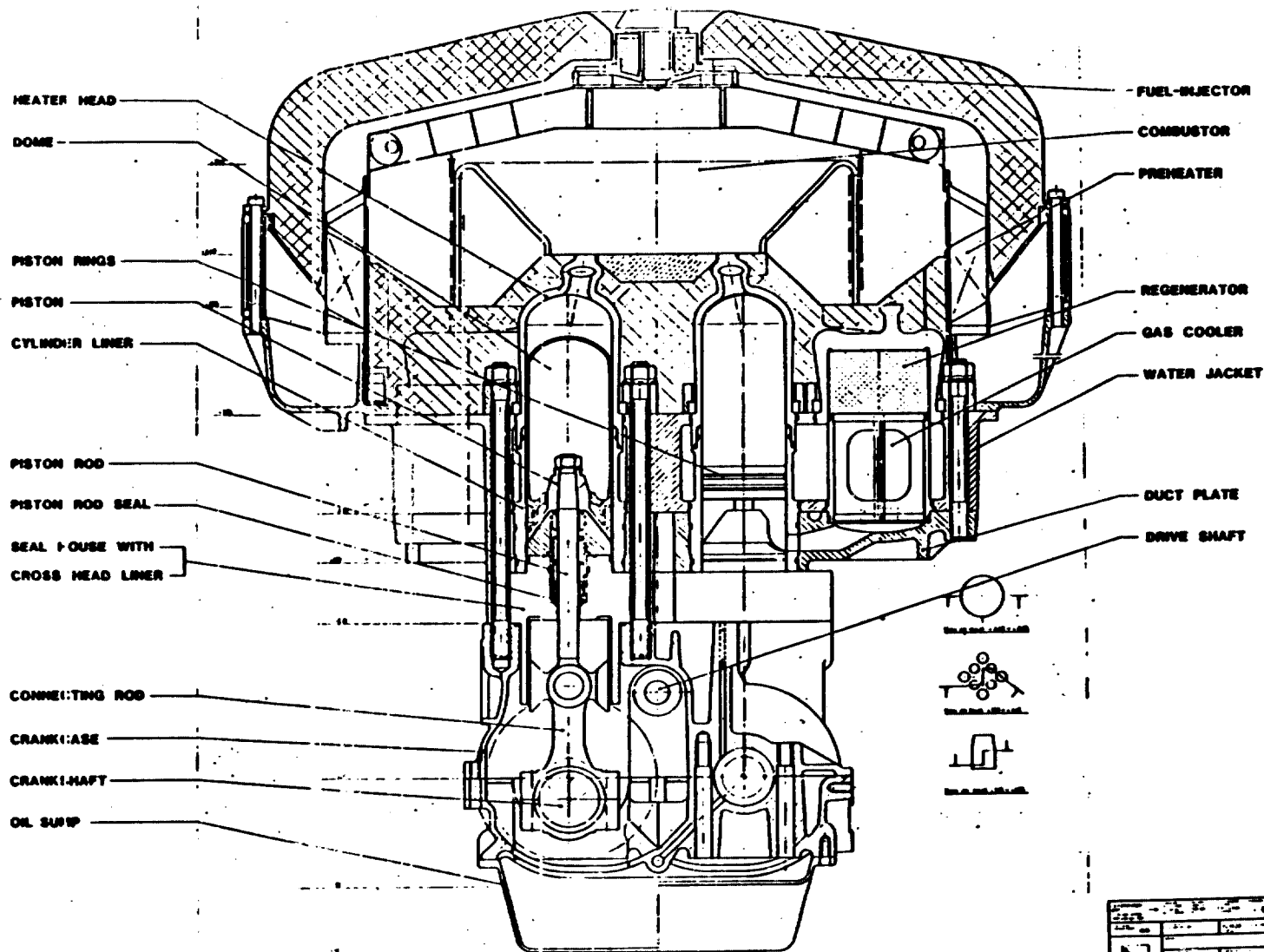
Drawings

ASE MOD I, BSE-drawings (revised to date, but not complete in details).

0-17047 ASE MOD I Nomenclature Basic Stirling Engine

--17043 ASE MOD I Layout Basic Stirling Engine.
For longitudinal sections, reference is made to
Engine Drive System.

--- Photos of a BSE Mock-up (main profiles).



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111-75

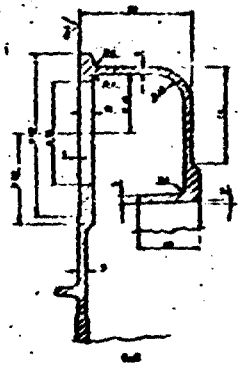
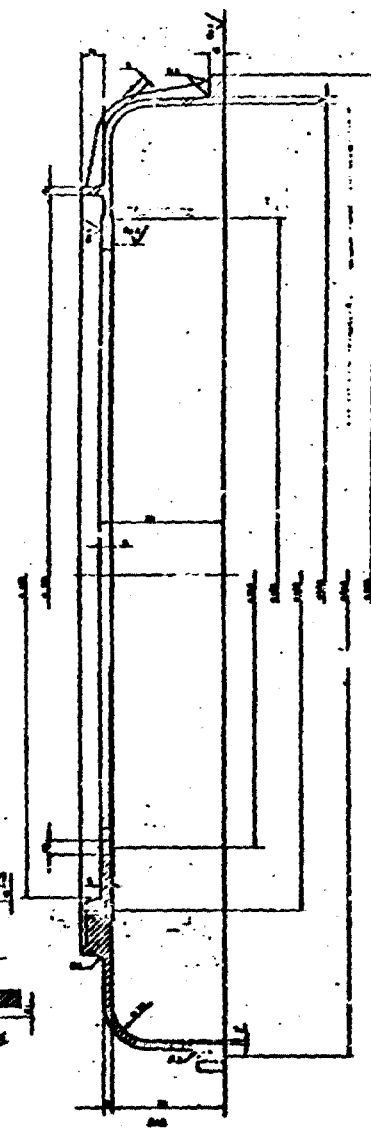
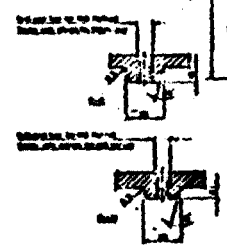
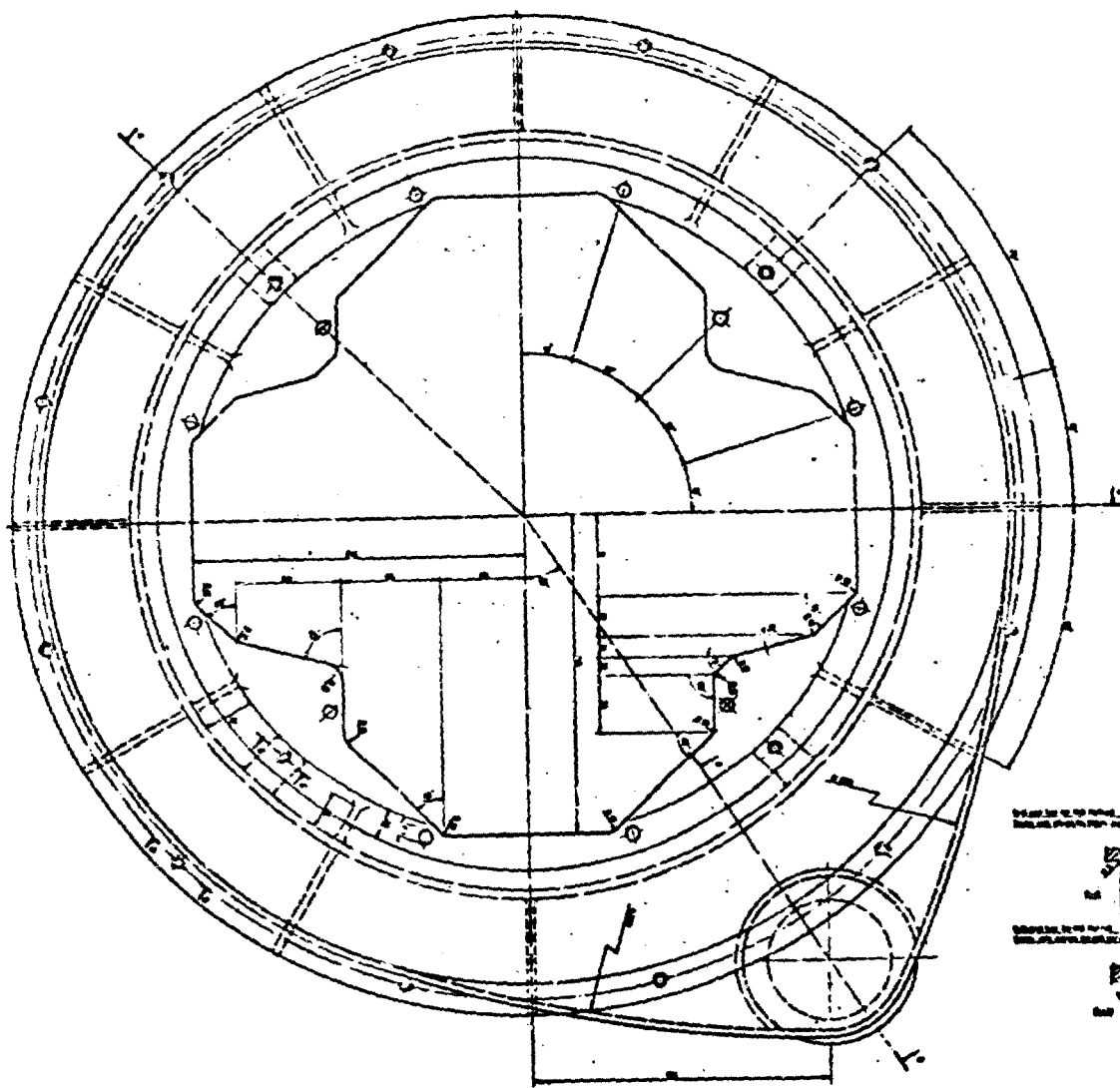
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111-75	111-75	111-75	111-75
111-75	111-75	111-75	111-75
111-75	111-75	111-75	111-75

External Heat System

C.4 Drawings - Update

-	Insulating Cover Assembly
0-17066	Air Inlet Casing
1-17054 1/2	Preheater Matrix
1-17054 2/2	Preheater Matrix
1-17055	Outside Tightening Plate
1-17057	Sheet Cone
1-17063	Lock Cover
1-17064	CGR Combustor
1-17142	Outside Sheet Casing
1-17143	Inside Sheet Casing
2-17059	Inside Tightening Plate
2-27061	Lower Sheet Ring
4-17058	Tightening Ring
4-17144	Sheet Ring
4-17145	Open Tightening Ring
4-17146	Flange
4-17147	Sheet Cone

111-78

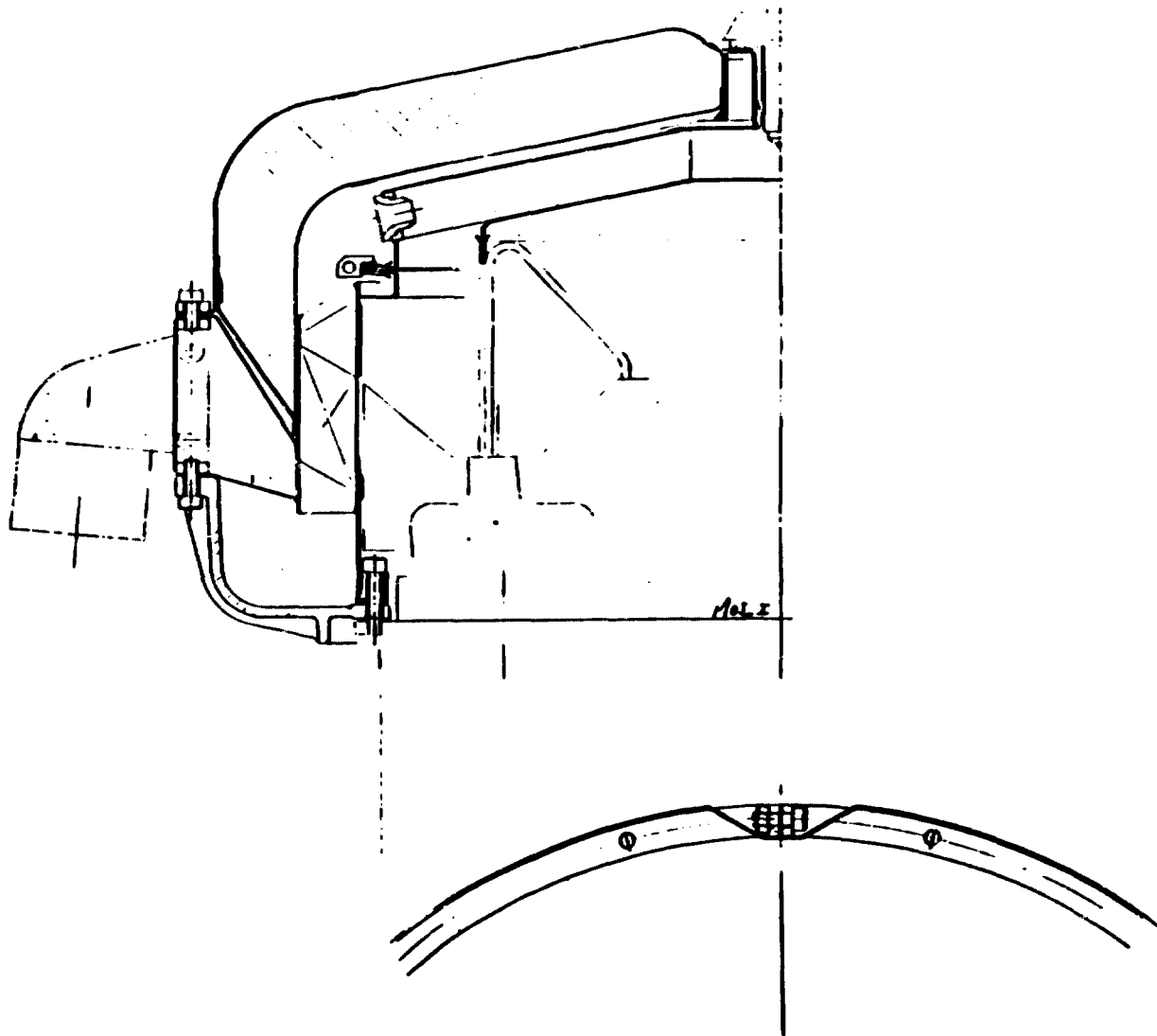


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Dwg. No. 0-17066

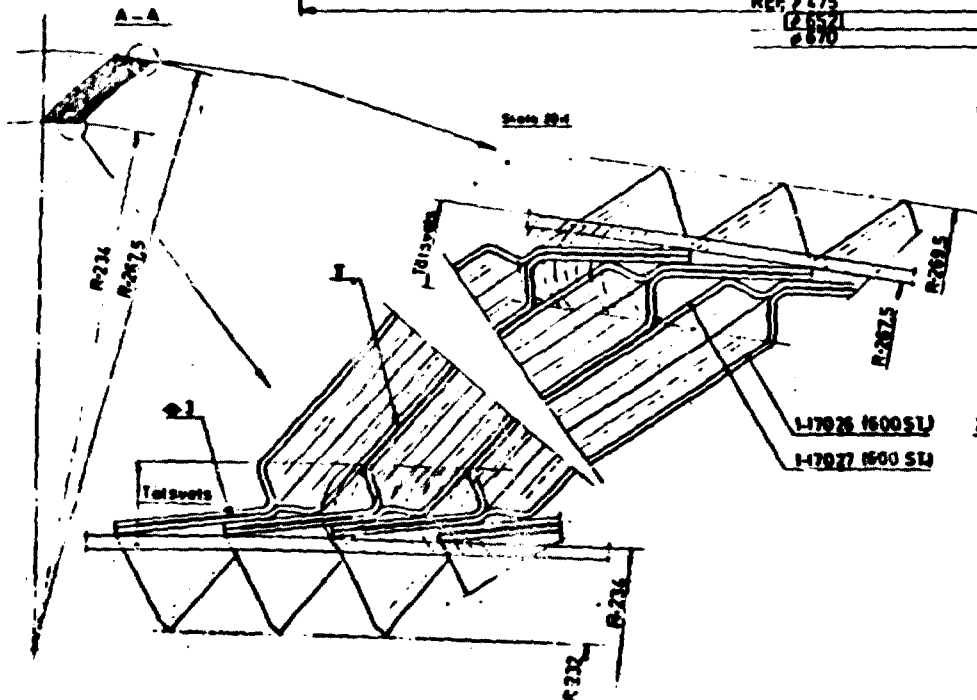
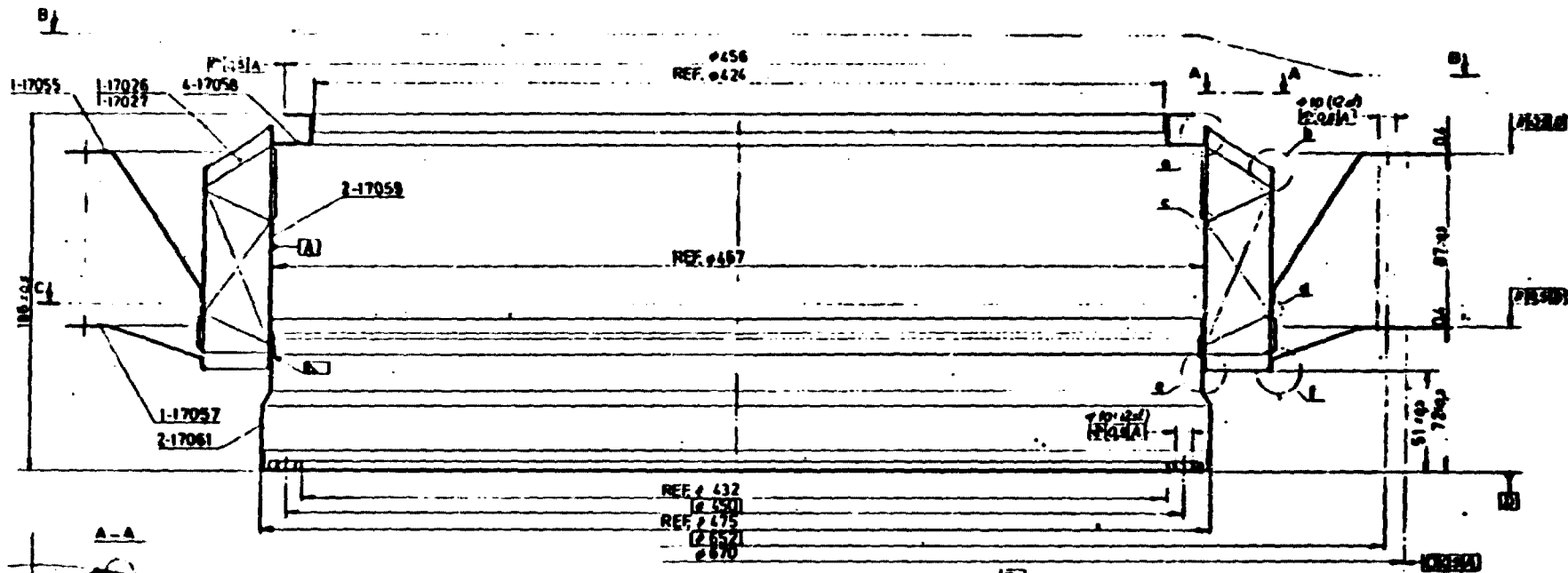
Air Inlet Casing

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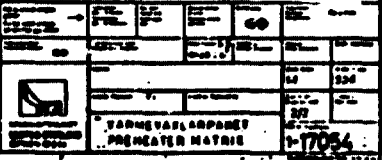
Insulating Cover Assembly

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1-17055	1-17056	1-17057	1-17058	1-17059
2-17059	2-17061	1-17055	1-17056	1-17057
1-17058	1-17059	2-17059	2-17061	1-17055
1-17056	1-17057	1-17058	1-17059	2-17059
2-17059	2-17061	1-17055	1-17056	1-17057
1-17058	1-17059	2-17059	2-17061	1-17055
1-17056	1-17057	1-17058	1-17059	2-17059
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09-111

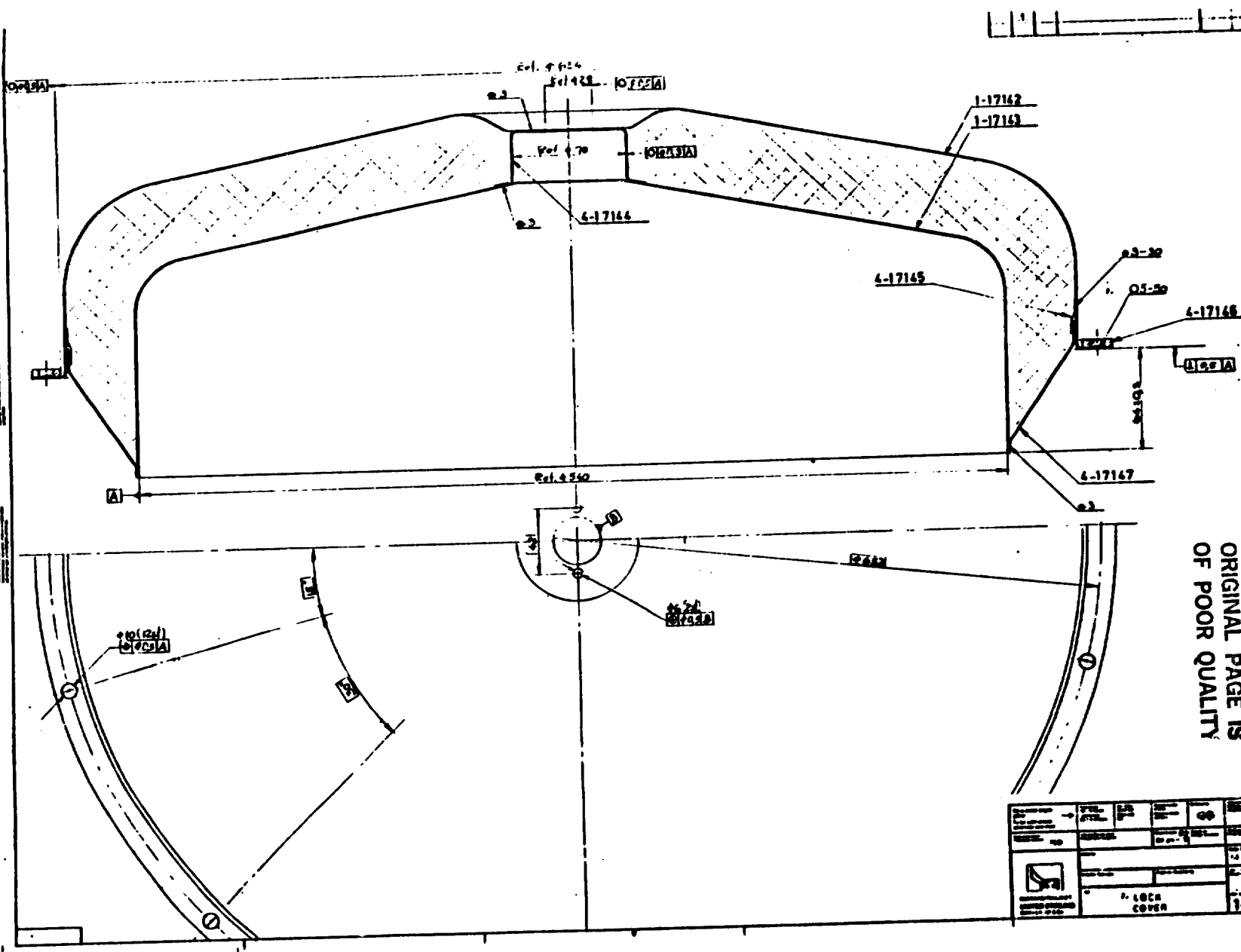
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111-81

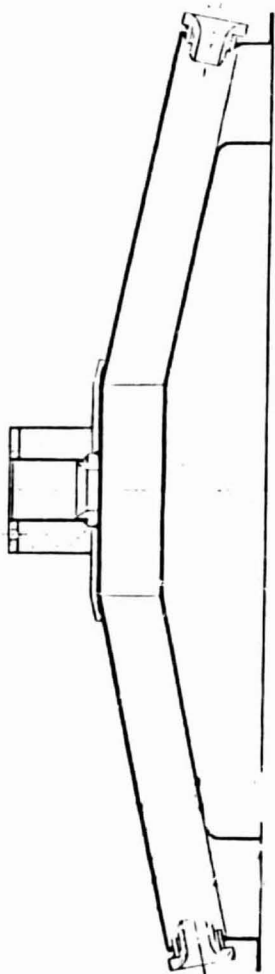
1. Name of the business 2. Address 3. City 4. State 5. Zip	6. Type of business 7. Date of establishment 8. Date of last inspection 9. Date of next inspection	10. Name of owner 11. Name of manager 12. Name of operator	13. Name of inspector 14. Name of supervisor 15. Name of assistant	16. Name of agent 17. Name of broker 18. Name of agent	19. Name of agent 20. Name of broker 21. Name of agent
22. Name of agent 23. Name of broker 24. Name of agent	25. Name of agent 26. Name of broker 27. Name of agent	28. Name of agent 29. Name of broker 30. Name of agent	31. Name of agent 32. Name of broker 33. Name of agent	34. Name of agent 35. Name of broker 36. Name of agent	37. Name of agent 38. Name of broker 39. Name of agent

Technical drawing of a semi-circular structure, likely a cross-section of a dome or a similar architectural element. The drawing shows a semi-circular profile with a vertical centerline. The top edge is labeled with a width of 0.670. The bottom edge is labeled with a width of 0.632. The structure is labeled "OF POOR QUALITY".

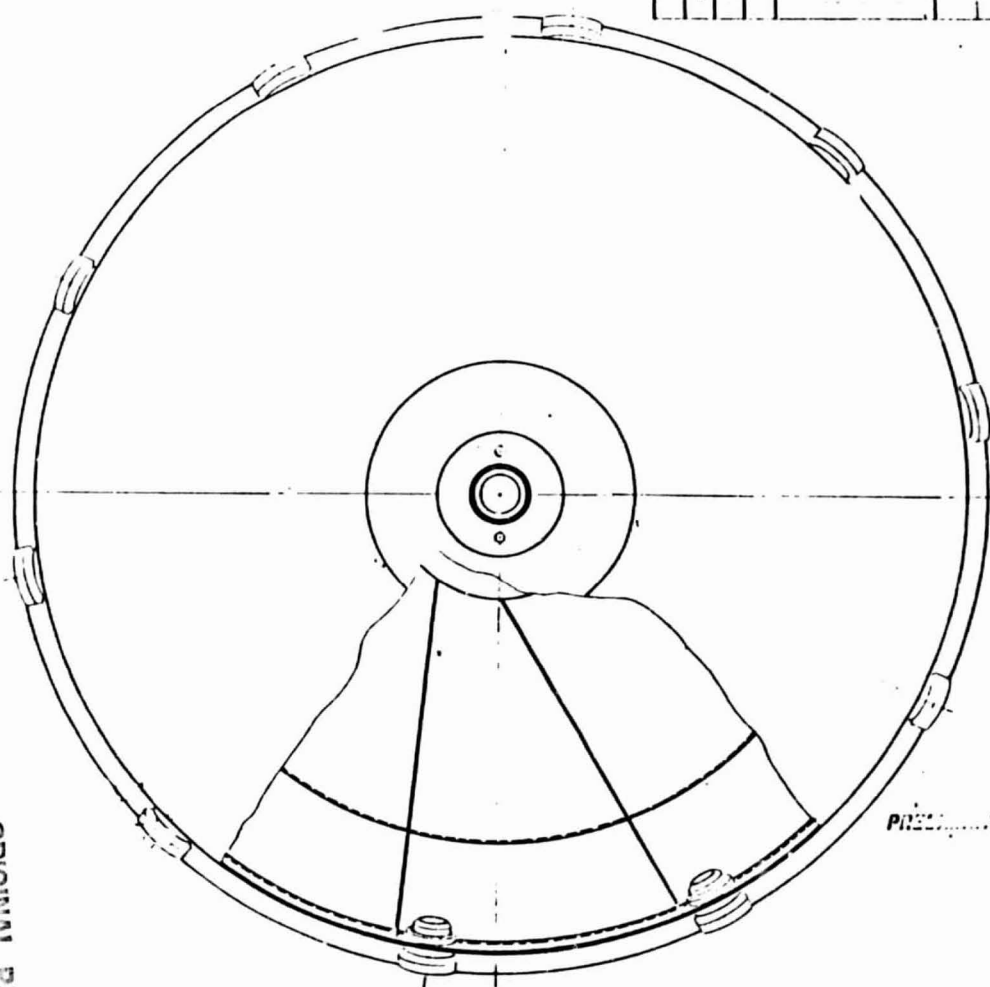
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111-84



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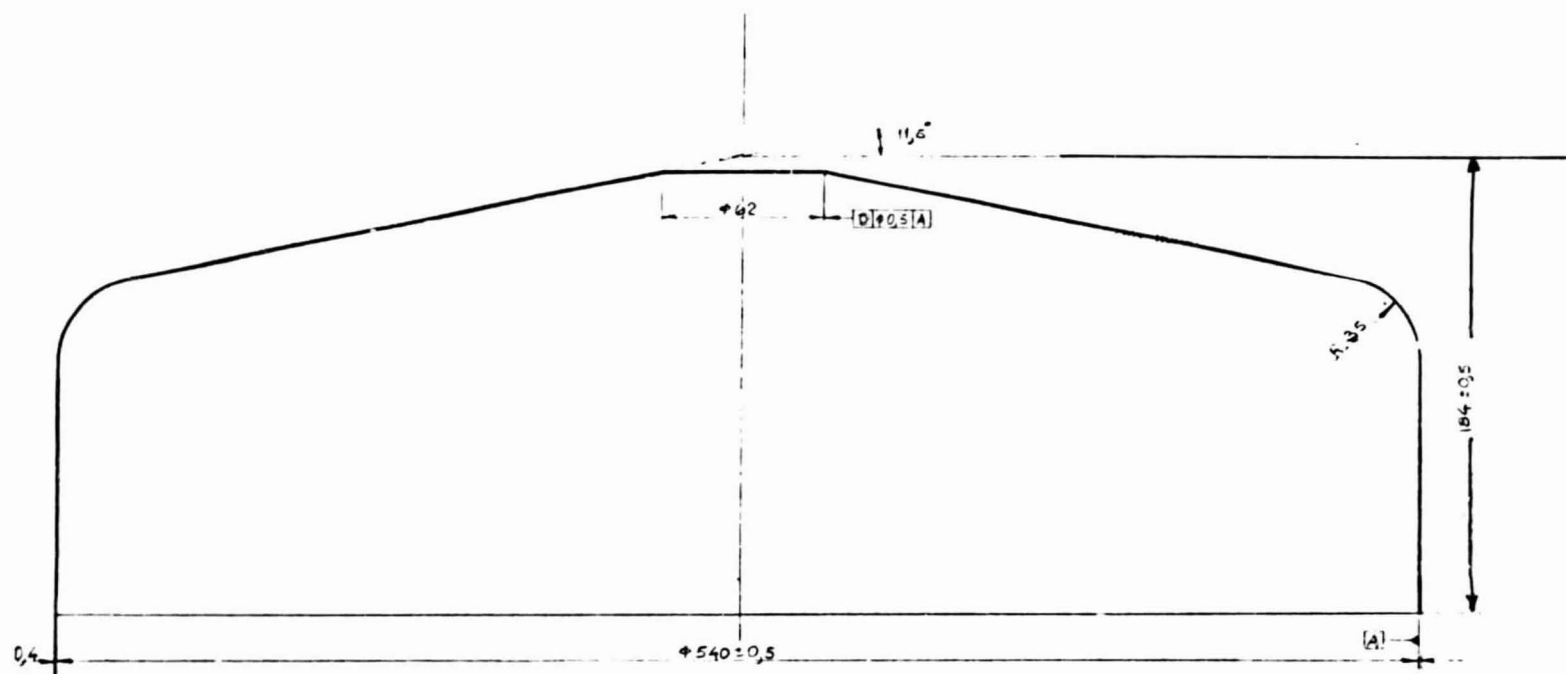


PRELIMINARY

1. TITLE	2. DATE	3. DRAWN BY	4. CHECKED BY	5. APPROVED BY
BRANHAMARE	1-17064			
CLN COMBUSTOR				
		UNITED STATES NAVY BRANHAMARE CLN COMBUSTOR		

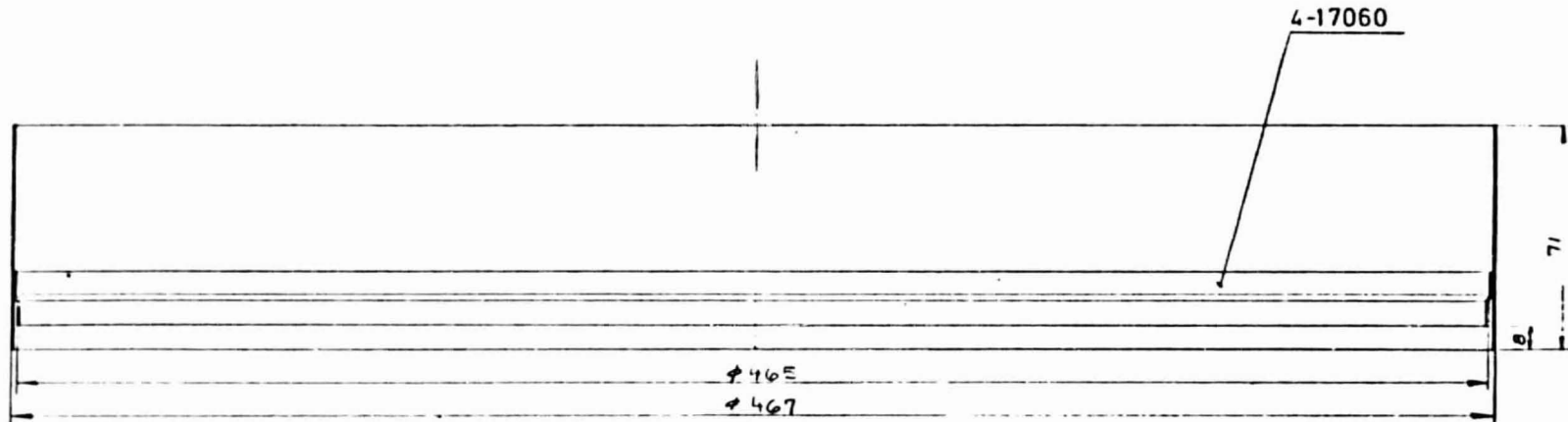
Do a visual inspection of the vessel and its contents.	Date of inspection Initials of inspector	Date of last inspection Initials of last inspector	Name of vessel No. of vessel	Name of owner Address of owner	Name of agent Address of agent	Name of consignee Address of consignee	Name of shipper Address of shipper
ISO	515 2333	10. 69	11	11	11	11	11
 UNITED STATES SHIPPING LINES	VITERMANTEL OUTSIDE SHEET CASING	1-17142	11	11	11	11	11

III-87



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		UNITED NATIONS ENGINEERING INSTITUTION	
NO. 515 2361	DATE: 1975	DRAWING NO. 1-17143	SCALE: 1:1



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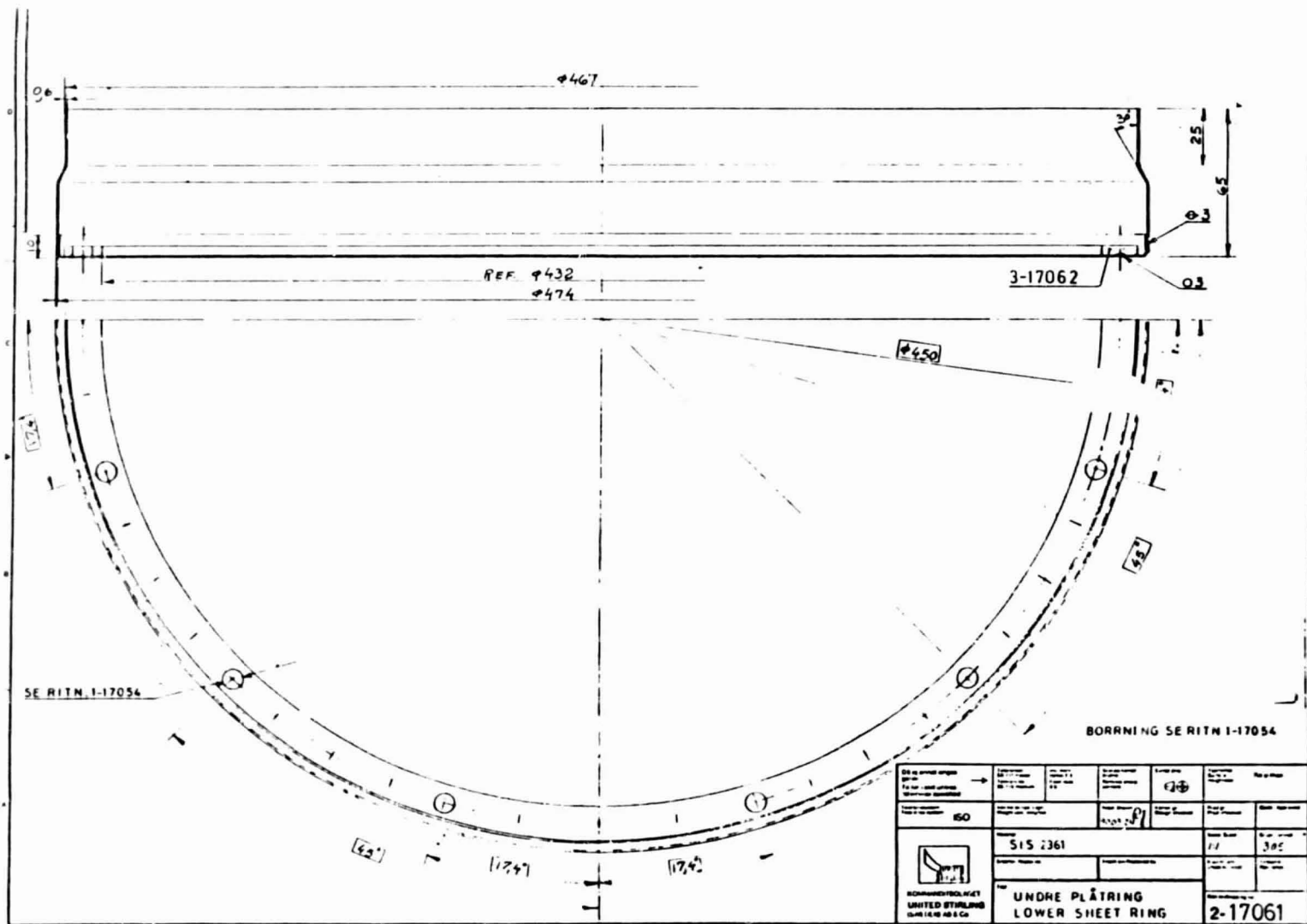
C8 is series angle given To be used unless otherwise specified	1. ISO 2. 100 mm 3. 100 mm	4. 100 mm 5. 100 mm 6. 100 mm	7. 100 mm 8. 100 mm 9. 100 mm	10. 100 mm 11. 100 mm 12. 100 mm	13. 100 mm 14. 100 mm 15. 100 mm	16. 100 mm 17. 100 mm 18. 100 mm
	19. 100 mm 20. 100 mm 21. 100 mm	22. 100 mm 23. 100 mm 24. 100 mm	25. 100 mm 26. 100 mm 27. 100 mm	28. 100 mm 29. 100 mm 30. 100 mm	31. 100 mm 32. 100 mm 33. 100 mm	34. 100 mm 35. 100 mm 36. 100 mm
40. 100 mm 41. 100 mm 42. 100 mm	43. 100 mm 44. 100 mm 45. 100 mm	46. 100 mm 47. 100 mm 48. 100 mm	49. 100 mm 50. 100 mm 51. 100 mm	52. 100 mm 53. 100 mm 54. 100 mm	55. 100 mm 56. 100 mm 57. 100 mm	58. 100 mm 59. 100 mm 60. 100 mm
61. 100 mm 62. 100 mm 63. 100 mm	64. 100 mm 65. 100 mm 66. 100 mm	67. 100 mm 68. 100 mm 69. 100 mm	70. 100 mm 71. 100 mm 72. 100 mm	73. 100 mm 74. 100 mm 75. 100 mm	76. 100 mm 77. 100 mm 78. 100 mm	79. 100 mm 80. 100 mm 81. 100 mm
82. 100 mm 83. 100 mm 84. 100 mm	85. 100 mm 86. 100 mm 87. 100 mm	88. 100 mm 89. 100 mm 90. 100 mm	91. 100 mm 92. 100 mm 93. 100 mm	94. 100 mm 95. 100 mm 96. 100 mm	97. 100 mm 98. 100 mm 99. 100 mm	100. 100 mm 101. 100 mm 102. 100 mm

ISO

515 2361

INRE TATNINGSPLÅT
INSIDE TIGHTENING PLATE

2-17059



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Ingår i mat. ritn. nr. 4-17054

Tillstånd Rev. tiller	Ändr. nr. Rev. no.	Läge Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					

Passas ritn. 1-17054

Då ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. hörn- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners	Europe. prov. 	Yttextur Surf. rough. ass Ra µ max
	Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc./weighed	Färdig/Drawn 80.0315 Rf	Konstr. gr. Design checked	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AS & Co	Material SIS 2361		Skala/Scale [1:1]		Grupp/Group 305
	Ersätter/Replaces		Ersatt av/Replaced by		Skad nr./ent. Sheet no./total
Titel TÄTNINGSRING TIGHTENING RING			Ritn. nr./Drawing no. 4-17058		

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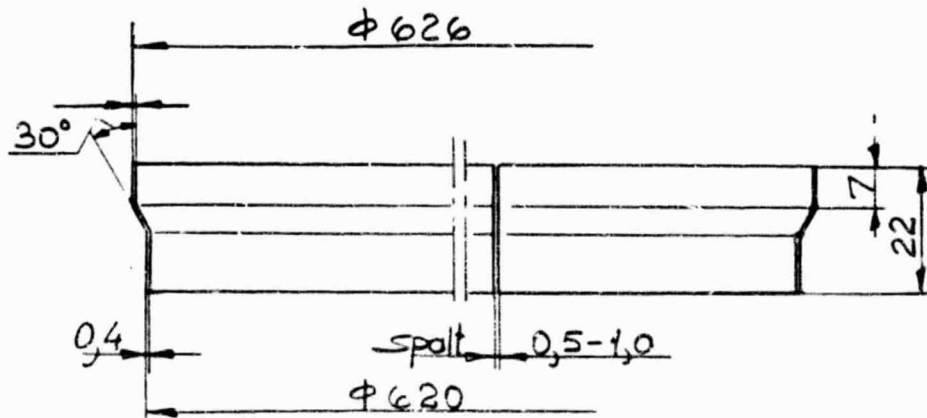
Tillstånd Rev. till	Ändr. nr. Rev. no.	Läga Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved	
	△						
DA ~ annat angav gäller: To be valid unless otherwise specified			Toleranser SS 715 medel Tolerances SS 715 medium	inr. höm- radier 0.5 Filer radi 0.5	Skarpa kanter brutna Remove sharp corners	Eurostat 	Ytfinhet Surface roughness Ra µ max
Toler. system Tolerance system ISO			Vikt beräknad/vägd Weigh. calc/ weighed	Ritad/Drawn 80.04.11 B	Kontrollerad Design checked	Prod. gr. Prod. checked	Godk./Approved
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			Material SIS 23 61		Skala/Scale 1:1	Grupp/Group 305	
Ersätter/Replaces			Ersatt av/Replaced by		Skad nr/art. Sheet no/art.	Tillstånd Rev. till	
Titel PLÅTRING SHEET RING			Rev. nr/Drawing no. 4-17144				

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<p>DA ej annat anges gäller: To be valid unless otherwise specified:</p>	<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>inr. håm- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa kanter brutna Remove sharp corners</p>	<p>Euro. pr. </p>	<p>Yttemått Surface roughness</p>	<p>Ra µ max</p>
<p>Toleranssystem Tolerance system ISO</p>	<p>Vikt beräknad / vikt Weight calc / weight</p>	<p>Färd / Dröm 80,04,11 0%</p>	<p>Kontroll gr Design checked</p>	<p>Prod. gr Prod. checked</p>	<p>Godk. / App. över</p>	
<p>Material SIS 2333</p>	<p>Skala / Scale 1:1</p>	<p>Grupp / Group 805</p>	<p>Blad nr / ant. Sheet no / tot.</p>	<p>Titelblad Rev. nr.</p>	<p>Blad nr / ant. Sheet no / tot.</p>	<p>Blad nr / ant. Sheet no / tot.</p>
<p>KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co</p>	<p>ÖPPEN TÄTNINGSRING OPEN TIGHTENING RING</p>	<p>4-17145</p>	<p>Blad nr / ant. Sheet no / tot.</p>	<p>Blad nr / ant. Sheet no / tot.</p>	<p>Blad nr / ant. Sheet no / tot.</p>	<p>Blad nr / ant. Sheet no / tot.</p>

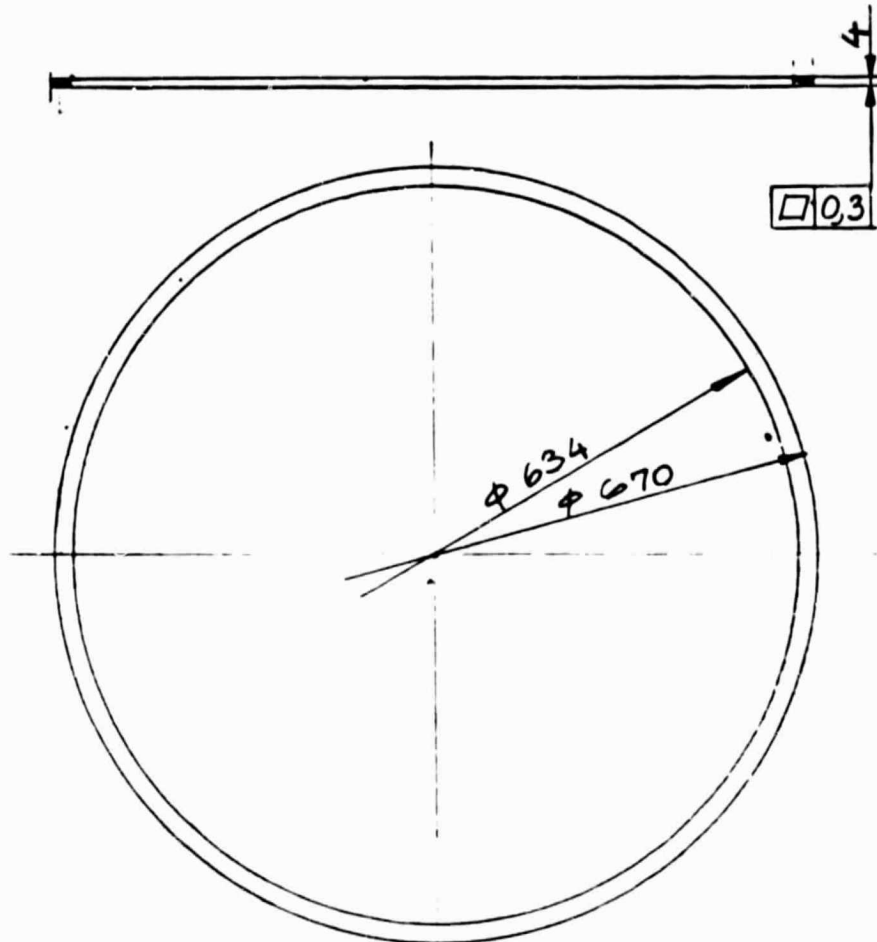
Ingår i samlat ritn. nr. 4 1-17063

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	1					



Tolerances system ISO	Toleranser SS 715 medel Tolerances SS 715 mean	Inv. höm- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners	Europ. pris 	Ytfinhet Surface roughness	Re μ max
	Vikt beräknad/vikt Weight calc./weight	Ritad/Dragen 80.04.11 P1	Konstr. gr Design checked	Prov. gr Test. checked	Godk./Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material SIS 2333		Starkt/Starkt 1.5	Grupp/Group 3C 6		
	Ersätter/Replaces		F: erst by/Replaced by	Stad nr/art. Sheet no./title	Titelblad Rev. letter	
	Titel FLÄNS FLANGE		Rita.nr/Drawing no. 4-17146			

Ingår i anst. ritn. nr. 8... 4-17146

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Ingår i serien ritn. nr. 1-17063

Tillstånd Rev. letter	Ändr. nr. Rev. no.	Läga Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved																																			
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Då ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. Runt- radie 0.5 Fillet radii 0.5	Skarpa kanter börjas Remove sharp corners	Europ. proj. 	Yttexturhet Surface roughness	Ra u max																																			
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Ersätter/Replaces			Ersatt av/Replaced by		Skad av/ort. Shed no./year	Tillstånd Rev. letter																																			
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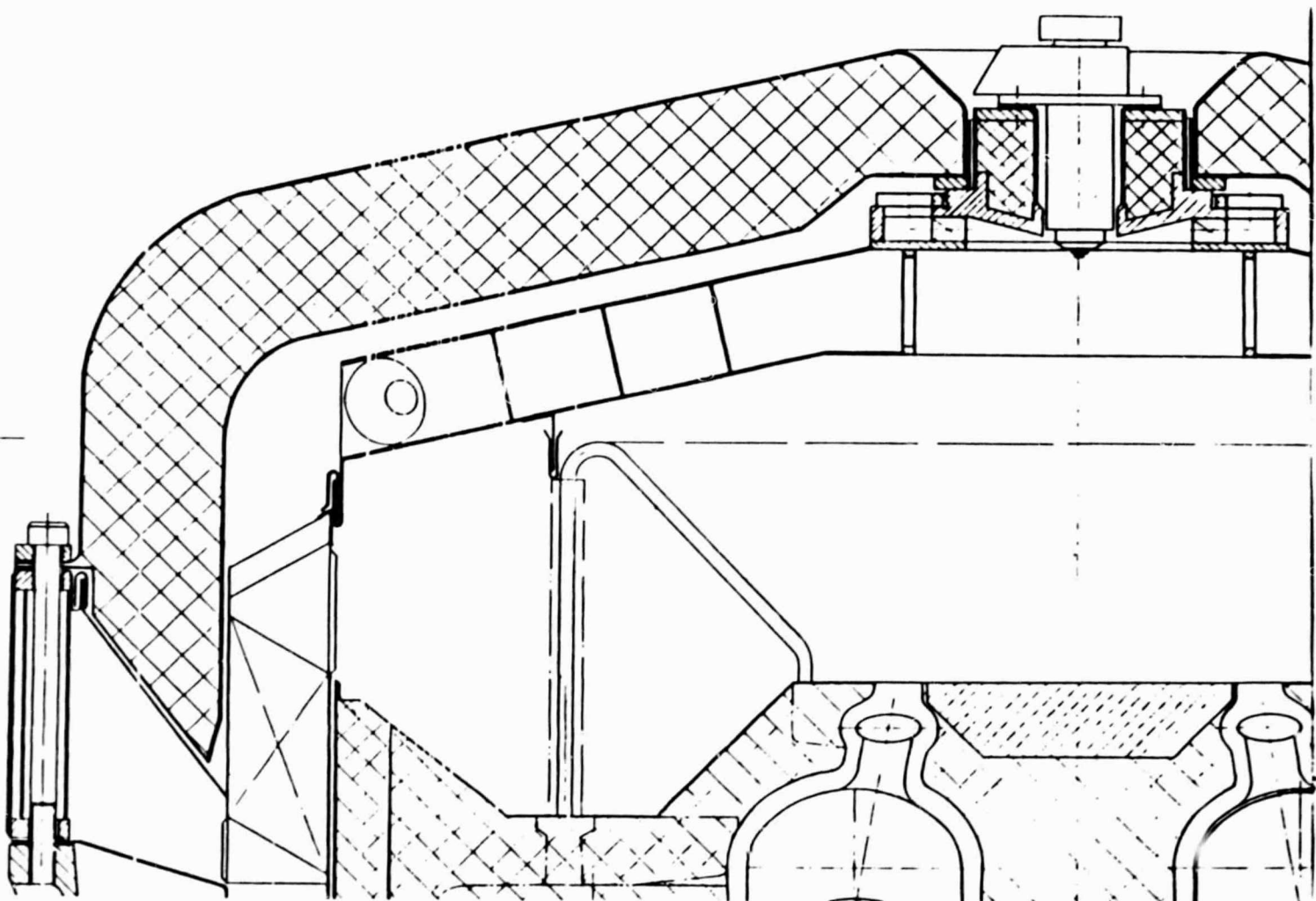
Drawings

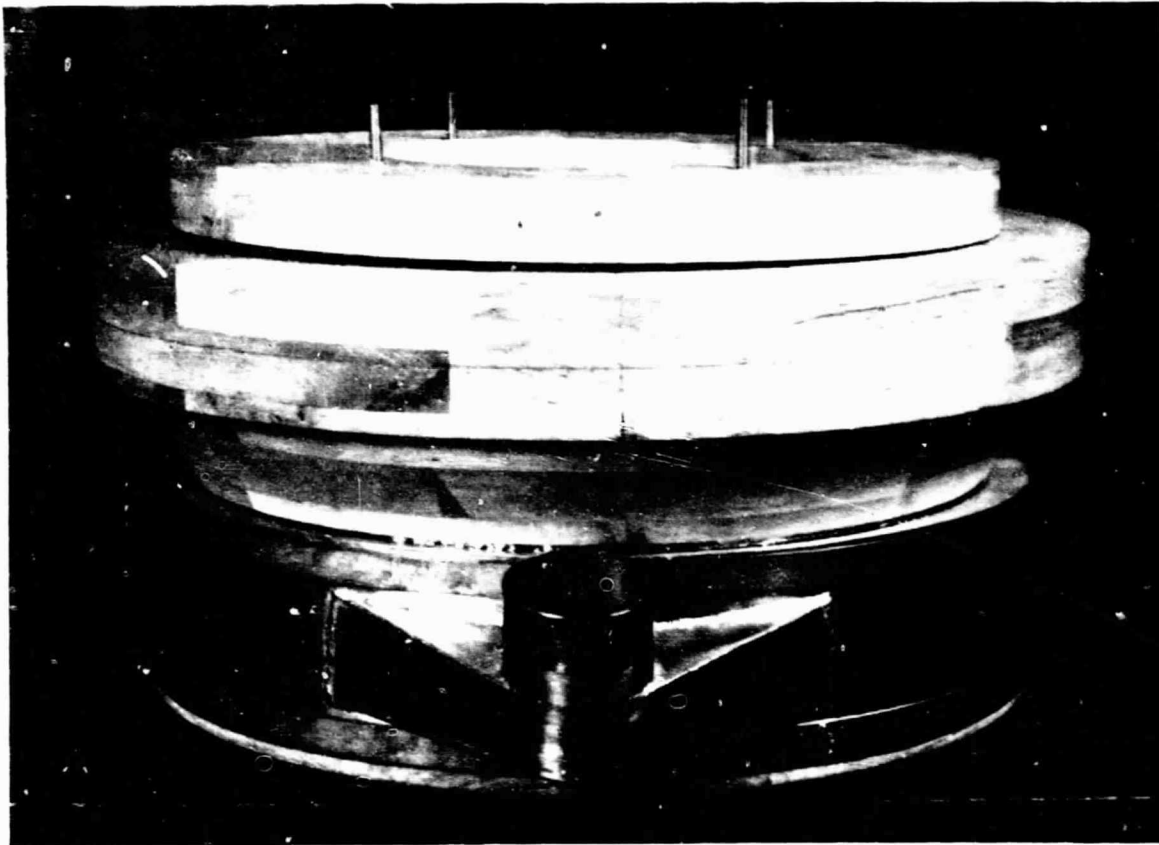
ASE Mod I, External Heat System (preliminary and schematic on details).

- System layout
 - Part of BSE layout
- System details
 - Plate coordinate list
- Supporting text object assemblies
 - 1-73570 Preheater Flow Distribution Test Assembly
 - Photos of the Assembly
 - 1-S-1254 Preheater Joining Test Assembly
 - Photos of the Assembly
 - Combustion test objects, see section 4.6.

C - 2

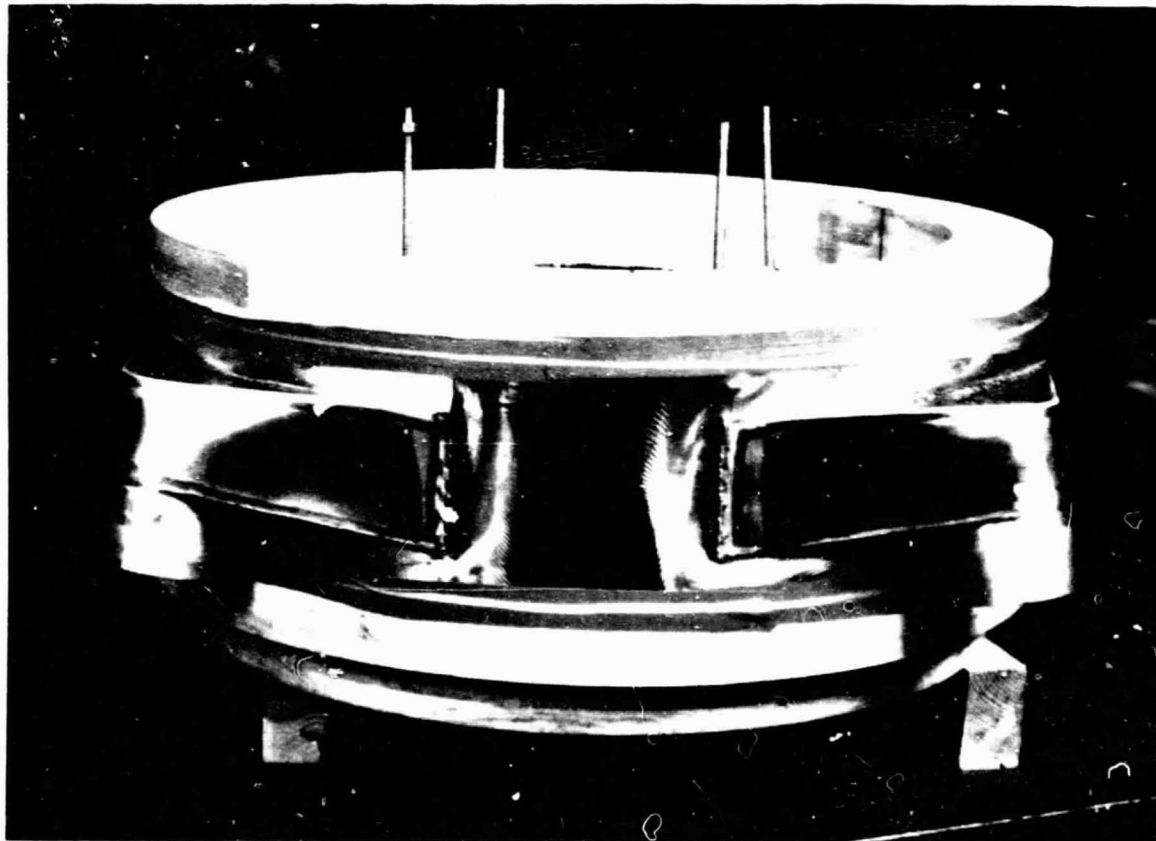
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Neg. K 468.

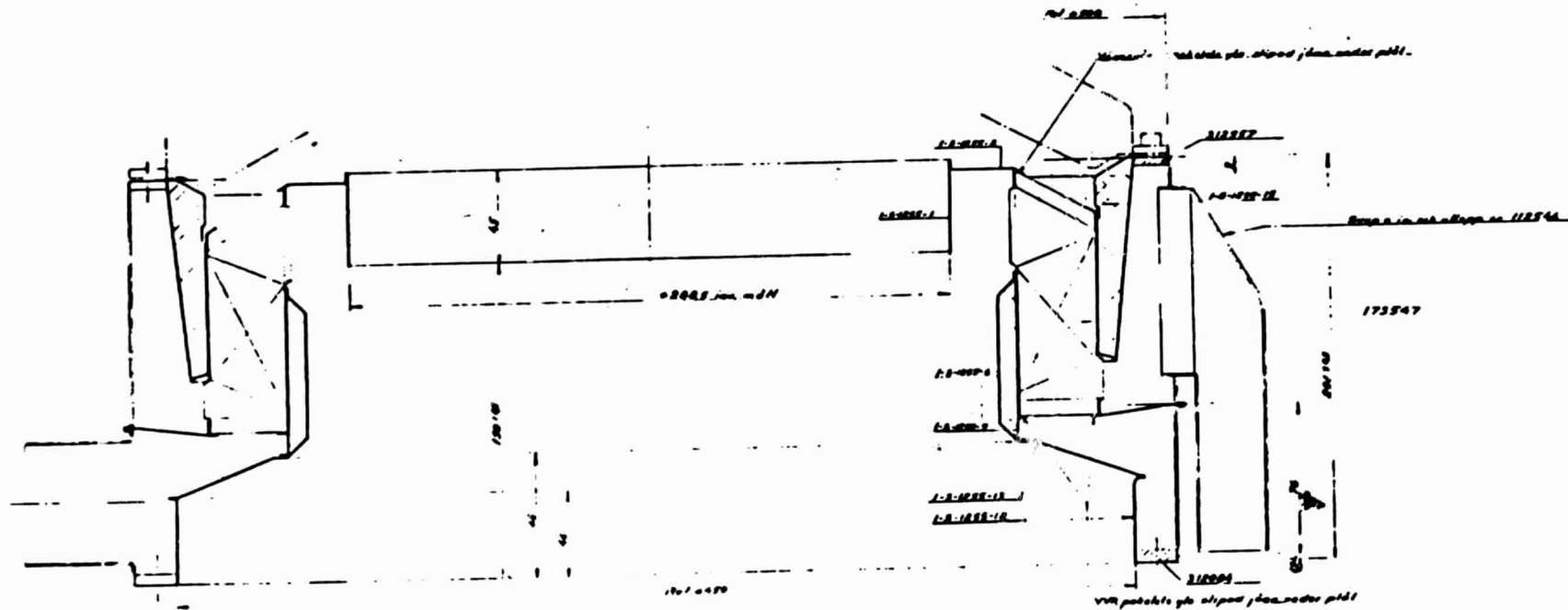
Exhaust Manifold Mock-Up



Neg. K 464.

Exhaust Manifold Mock-Up
III-98

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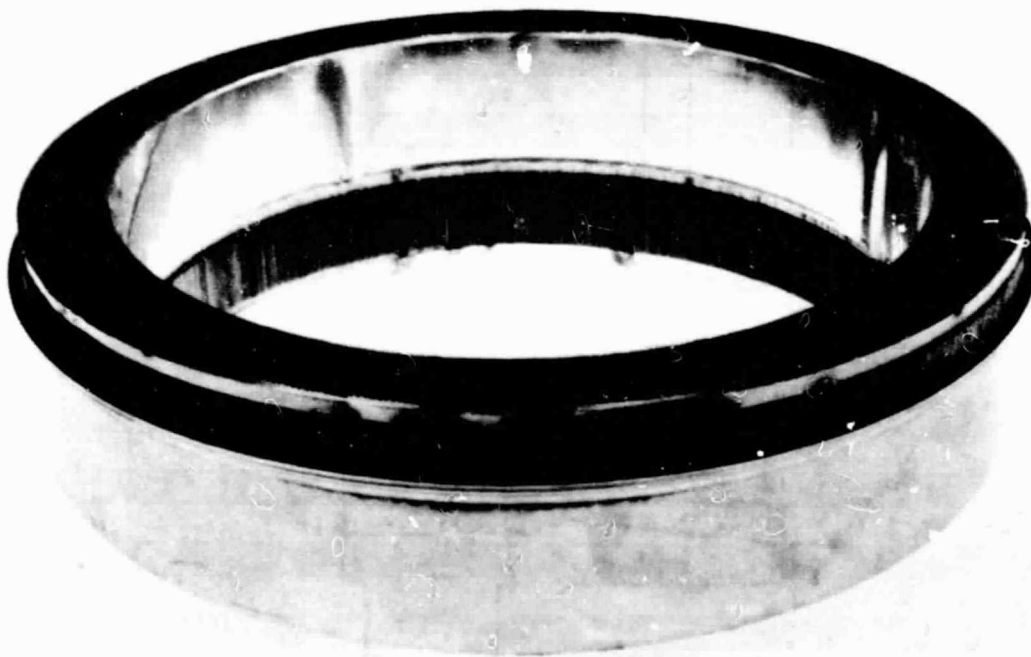
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1-5-1254

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Top View of Preheater Assembly



Side View of Preheater Assembly

Hot Engine System

C.5 Drawings - Update

1	Insulating and Thermocouple Arrangement
2-17020	Gas Cooler Machining
2-17151	Flame Guard Assembly
2-17172	Insulating Outer Cover
2-17173	Insulating Inner Cover
3-17018	Cooler Housing
3-17118	Heater Tube Assembly
3-17120	" " "
3-17129	Tube For Thermocouple
3-17152	Casing
3-17153	Cover
3-17159	Tube For Thermocouple Assembly
3-17170	Scaling Groove
4-17015	Back-up Ring
4-17119	Heater Tube
4-17131	Sleeve For Thermocouple
4-17134	Boss
4-17135	Plug
4-17136	Plug
4-17154	Plate
4-17155	Plate
4-17156	Dowel
4-17157	Spring Carrier
4-17158	Spring
4-17160	Tube For Thermocouple
4-17161	Sleeve For Thermocouple

C.5 Drawings - Update (Cont.)

4-17162	Tube For Thermocouple Assembly
4-17163	" " "
4-17164	" " "
4-17165	" " "
4-17166	" " "
4-17167	Lock Plate
4-17168	Sleeve
4-17169	Lock PLate
4-17171	Pipe

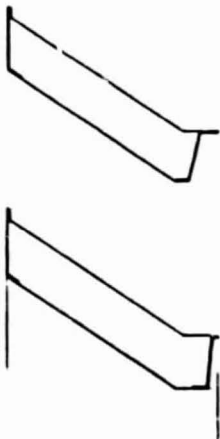
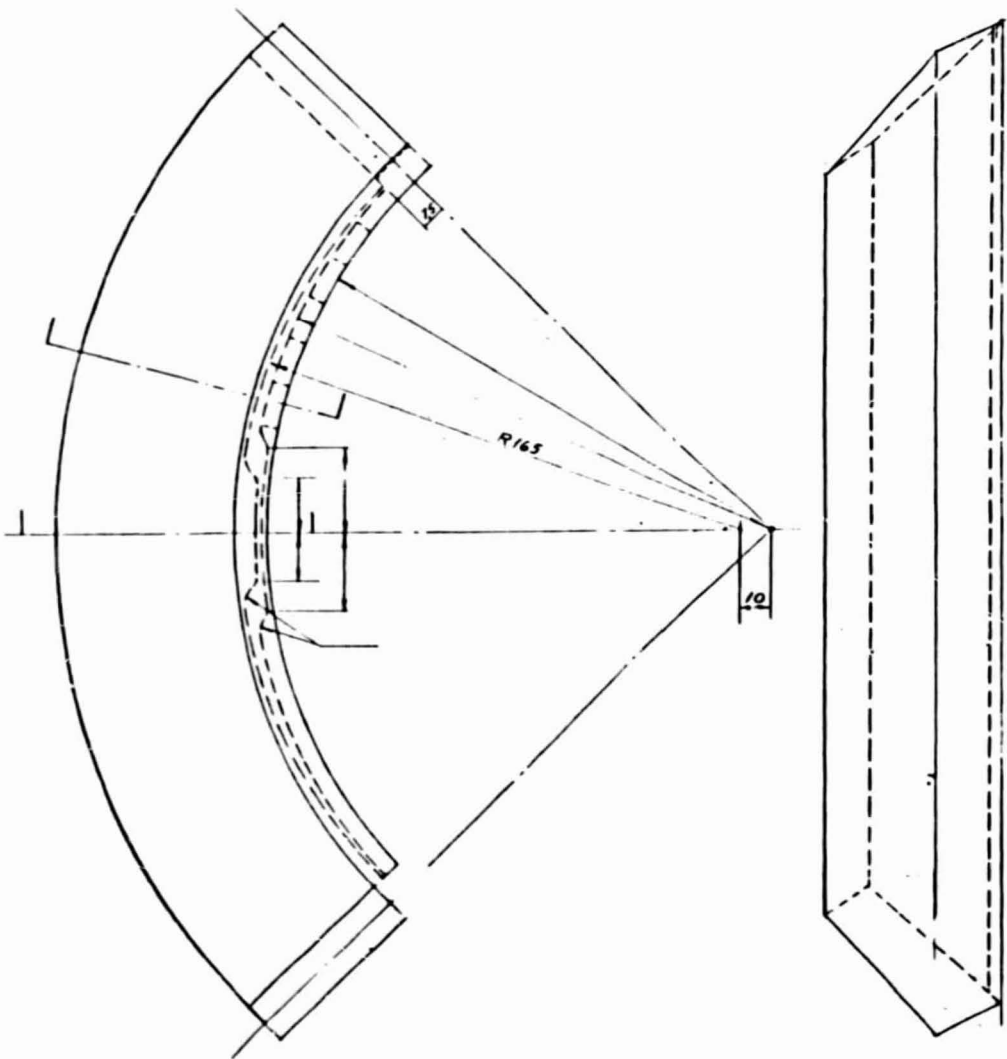
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III-103

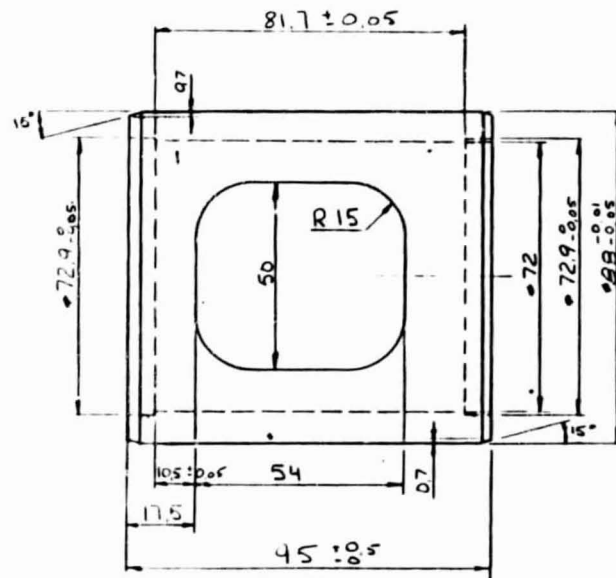
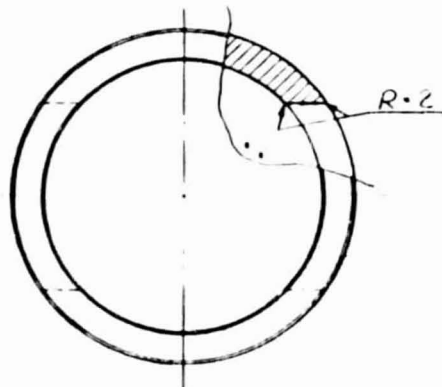
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
Fill in serial angles given below Do not insert angles otherwise specified		1. Type and size of member 2. Size of member 3. Material	4. Size, shape and use of 5. Size and use of	6. Type and size of 7. Type and size of	8. Type and size of 9. Type and size of	10. Type and size of 11. Type and size of	12. Type and size of 13. Type and size of	14. Type and size of 15. Type and size of	16. Type and size of 17. Type and size of	18. Type and size of 19. Type and size of	20. Type and size of 21. Type and size of	22. Type and size of 23. Type and size of	24. Type and size of 25. Type and size of	26. Type and size of 27. Type and size of	28. Type and size of 29. Type and size of	30. Type and size of 31. Type and size of	32. Type and size of 33. Type and size of	34. Type and size of 35. Type and size of	36. Type and size of 37. Type and size of	38. Type and size of 39. Type and size of	40. Type and size of 41. Type and size of	42. Type and size of 43. Type and size of	44. Type and size of 45. Type and size of	46. Type and size of 47. Type and size of	48. Type and size of 49. Type and size of	50. Type and size of 51. Type and size of	52. Type and size of 53. Type and size of	54. Type and size of 55. Type and size of	56. Type and size of 57. Type and size of	58. Type and size of 59. Type and size of	60. Type and size of 61. Type and size of	62. Type and size of 63. Type and size of	64. Type and size of 65. Type and size of	66. Type and size of 67. Type and size of	68. Type and size of 69. Type and size of	70. Type and size of 71. Type and size of	72. Type and size of 73. Type and size of	74. Type and size of 75. Type and size of	76. Type and size of 77. Type and size of	78. Type and size of 79. Type and size of	80. Type and size of 81. Type and size of	82. Type and size of 83. Type and size of	84. Type and size of 85. Type and size of	86. Type and size of 87. Type and size of	88. Type and size of 89. Type and size of	90. Type and size of 91. Type and size of	92. Type and size of 93. Type and size of	94. Type and size of 95. Type and size of	96. Type and size of 97. Type and size of	98. Type and size of 99. Type and size of	100. Type and size of 101. Type and size of	102. Type and size of 103. Type and size of	104. Type and size of 105. Type and size of	106. Type and size of 107. Type and size of	108. Type and size of 109. Type and size of	110. Type and size of 111. Type and size of	112. Type and size of 113. Type and size of	114. Type and size of 115. Type and size of	116. Type and size of 117. Type and size of	118. Type and size of 119. Type and size of	120. Type and size of 121. Type and size of	122. Type and size of 123. Type and size of	124. Type and size of 125. Type and size of	126. Type and size of 127. Type and size of	128. Type and size of 129. Type and size of	130. Type and size of 131. Type and size of	132. Type and size of 133. Type and size of	134. Type and size of 135. Type and size of	136. Type and size of 137. Type and size of	138. Type and size of 139. Type and size of	140. Type and size of 141. Type and size of	142. Type and size of 143. Type and size of	144. Type and size of 145. Type and size of	146. Type and size of 147. Type and size of	148. Type and size of 149. Type and size of	150. Type and size of 151. Type and size of	152. Type and size of 153. Type and size of	154. Type and size of 155. Type and size of	156. Type and size of 157. Type and size of	158. Type and size of 159. Type and size of	160. Type and size of 161. Type and size of	162. Type and size of 163. Type and size of	164. Type and size of 165. Type and size of	166. Type and size of 167. Type and size of	168. Type and size of 169. Type and size of	170. Type and size of 171. Type and size of	172. Type and size of 173. Type and size of	174. Type and size of 175. Type and size of	176. Type and size of 177. Type and size of	178. Type and size of 179. Type and size of	180. Type and size of 181. Type and size of	182. Type and size of 183. Type and size of	184. Type and size of 185. Type and size of	186. Type and size of 187. Type and size of	188. Type and size of 189. Type and size of	190. Type and size of 191. Type and size of	192. Type and size of 193. Type and size of	194. Type and size of 195. Type and size of	196. Type and size of 197. Type and size of	198. Type and size of 199. Type and size of	200. Type and size of 201. Type and size of	202. Type and size of 203. Type and size of	204. Type and size of 205. Type and size of	206. Type and size of 207. Type and size of	208. Type and size of 209. Type and size of	210. Type and size of 211. Type and size of	212. Type and size of 213. Type and size of	
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FIG. 10 is a view of the cover To be used on the structure specified	Part No. 111-106 Description Insulating cover	Part No. 111-106 Description Insulating cover	Part No. 111-106 Description Insulating cover	Part No. 111-106 Description Insulating cover	Part No. 111-106 Description Insulating cover	Part No. 111-106 Description Insulating cover
Material 50	Quantity 1	Unit Each	Price \$1.00	Total \$1.00	Date 2-17-72	By [Signature]
UNITED STYRING (INC.) 111-106 & Co.	Insulating cover outer					2-17-72



Dä g av ar ar an ges gä tär → To be used unless otherwise specified	Temperatur 55-75°C max Temperatur 55-75°C max	Max. influ- ensen 5,5 Filter rate 5,5	Storage container Suitable Automatic sharp corner	Survey price 	Registered Surface 1000 mm ²	No. of items
1. Information Information system	ISO	Info. (technical) weight Weight (kg) / weight (lb)	Product/Group 7/10-74 AVALIA	Number of Storage (kg)	Price of Product (kg)	Date / Approval
	Material SIS 2343 + 40/1	Supplier/Region	Brand and Replacement by	Item/Scale 1:1	Group/Group	Technical File No. A
KOMBANDISOLAGET UNITED STIRLING (SWEDEN) AB & Co	Test KYLAR HUS COOLER HOUSING				Date of Drawing no	3-17018

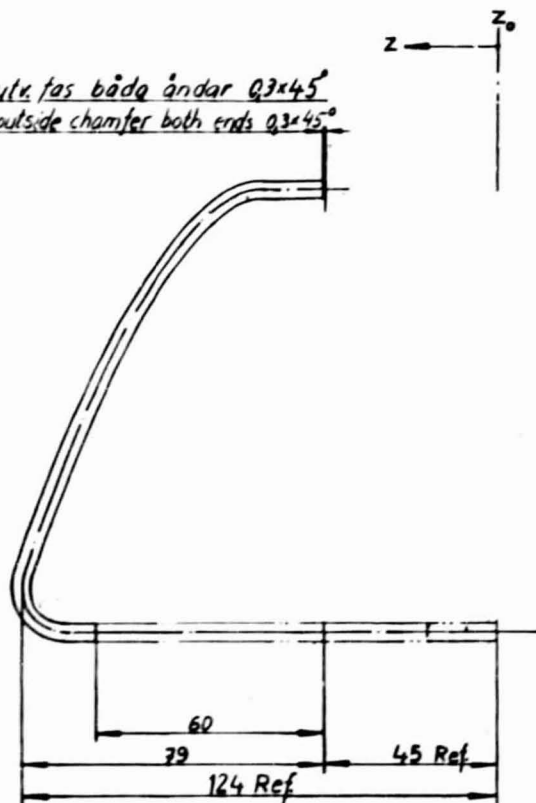
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P-Ni filler metal thickness 15μ according to TS 82011

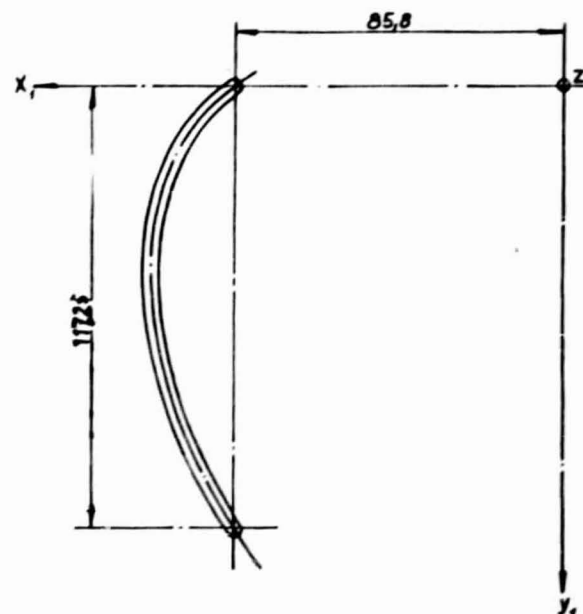


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KÖRMANNSBOLAGET LIMITED STYLING (SWEDEN) AB & Co	<u>Värmarrör, smst.</u> <u>Heater tube, assy</u>	Ref No Drawing no 3-17118
--	---	-------------------------------------

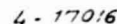


Röret böckas enligt TS 80.010
Tube to be bent according to TS 80.010



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[illegible]



Glued according to Ref No 79-0060 u.
Linnad enl. specification nr. 79-0060 u.

Identified here with
drug No. 3-17021

Markt här med
rån. nr 3-17021

4-14393

O-ring 76.0x3 Viton

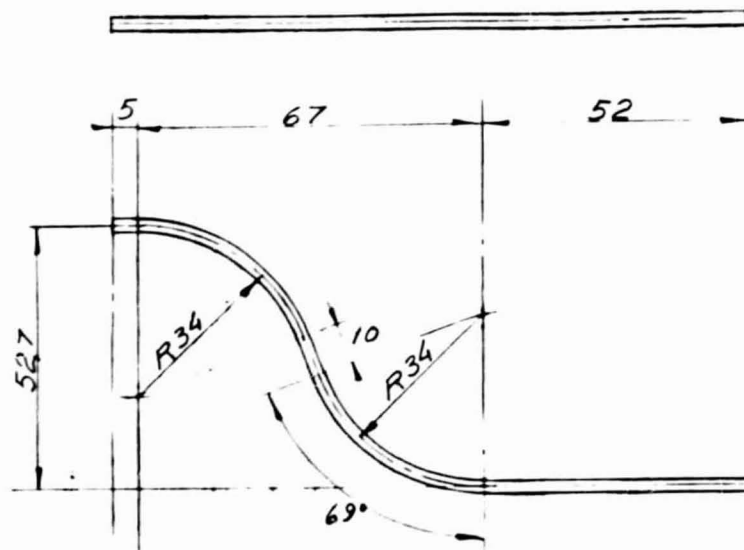
O-ring 76.0 = 3 Viton

4-17015

O-ring 79,5 x 3 Viton

Pack the cooler without any dirt in a plastic bag.
Förpacka kylaren smutsfritt i en plastpåse.

[illegible]



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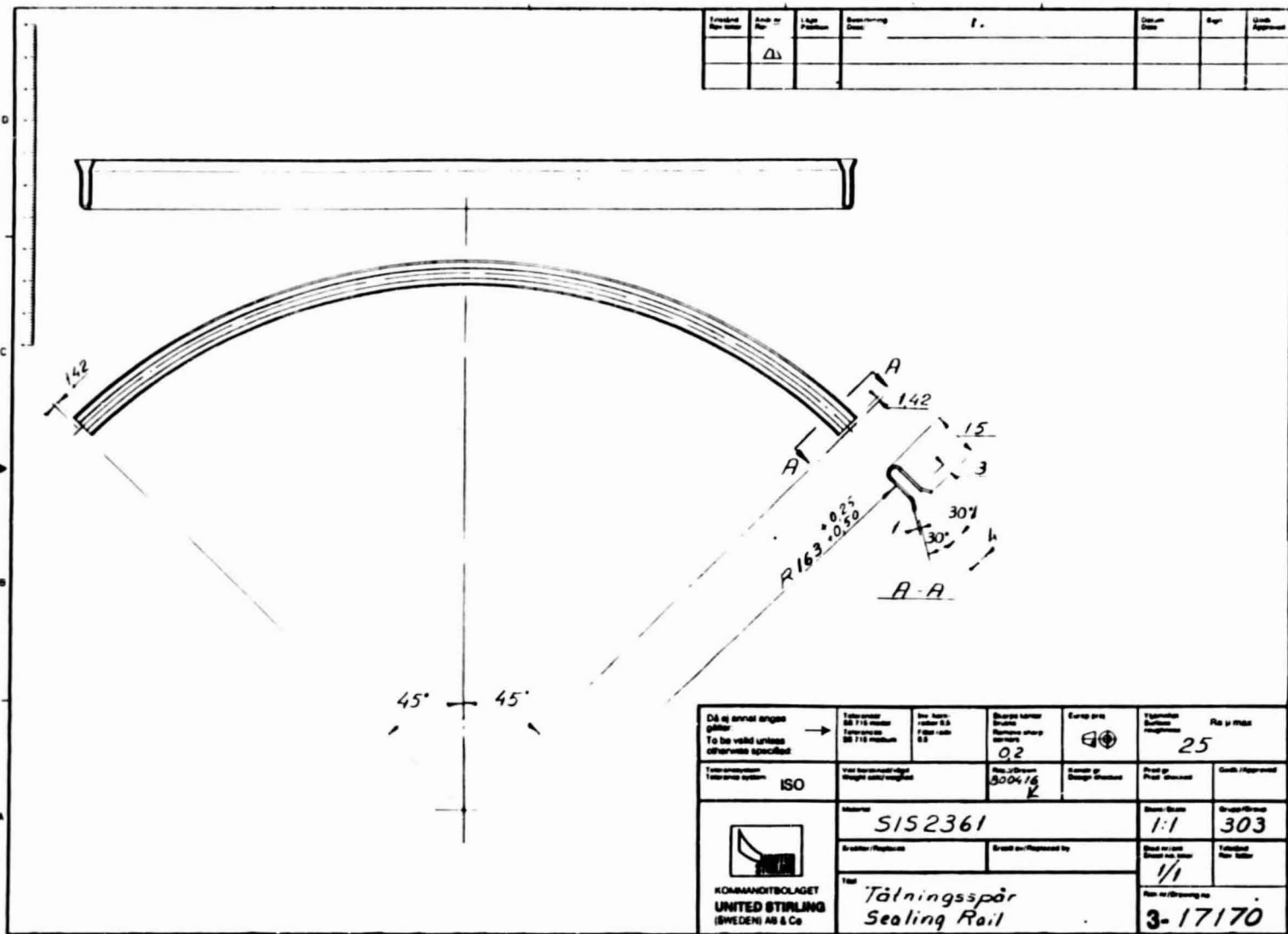
Då ej annat anges gäller To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Min. horn radi 0.5 Fast radi 0.8	Skarpa kanter bruna Remove sharp corners 0.2	Europ. pr. 	Yttextur Surface roughness Ra µ max 10
Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc/weight	Read/Drawn	Kontroll gr Design checked K	Prod gr Prod. checked	Godk. / Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material SIS 2333 Rör 2.6x2.0		Skala/Scale 1:1		Grupp/Group 303
	Ersätter/Replaces		Ersatt av/Replaced by		Blad nr/om Sheet no./total 1/1
	1 st Rör för termoelement Tube for thermocouple				Rev. nr/Drawing no. 3-17129

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Issued Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.

Då ej annat anges gäller To be valid unless otherwise specified		Teknisk tecken SIS 1715 standard Tolerans SIS 1715 standard	ISO	ISO	ISO	ISO	ISO	ISO	ISO
Material SIS 2361		Skala 1:1	Skala 1:1	Skala 1:1	Skala 1:1	Skala 1:1	Skala 1:1	Skala 1:1	Skala 1:1
Tätningsspår Sealing Rail		303	303	303	303	303	303	303	303
SIS 17170									

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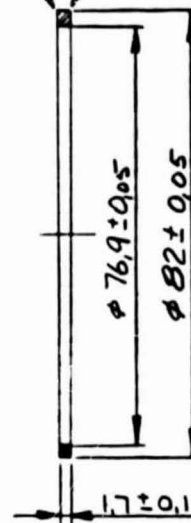
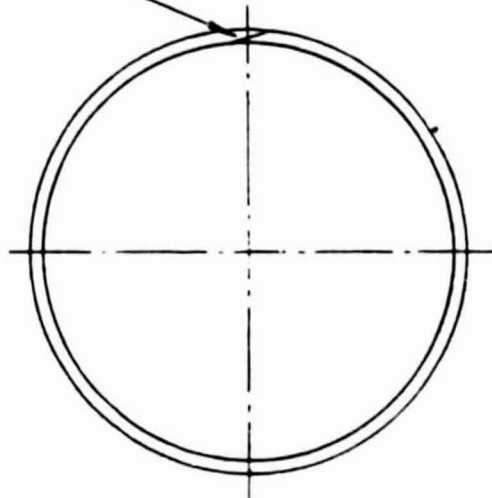
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Titel Rev. till	Ändr. nr. Rev. nr.	Lägg Position	Beskrivning Description
	△		

*The back-up-ring is allowed
to be divided at mounting.*
*Stödtringen får lov att delas
vid montering.*

Sharp corners
Skarpa hörn



*The surfaces shall be smooth and free
from burr and other defectives.*

*Ytor ska vara glatta, jämna och
fria från grader och andra defekter.*

Då ej annat anges gäller: To be valid unless otherwise specified:	→	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. håls- radier 0,5 Fillet radii 0,5	Skarpa hörn brutna Remove sharp corners	Europ. prot. 	Ytfinish Surface roughness	Re μ max
Toleranssystem Tolerance system	ISO	Vikt beräknad/vikt Weight calc/weight	Skad/Övers 4/10-71 APÄV10	Kontroll av Design skedd	Prod. gr. Prod. checked	Godk. / Approved	
	Material Teflon					Stads/Stads	Grupp/Group
	Görda/Platsen			Gross anv/Replaced by		Skad nr / ant. Skad nr / total	Titel Rev. tiller A
	Titel STÖDRING BACK-UP-RING					Rev. nr / Drawing no. 4-17015	

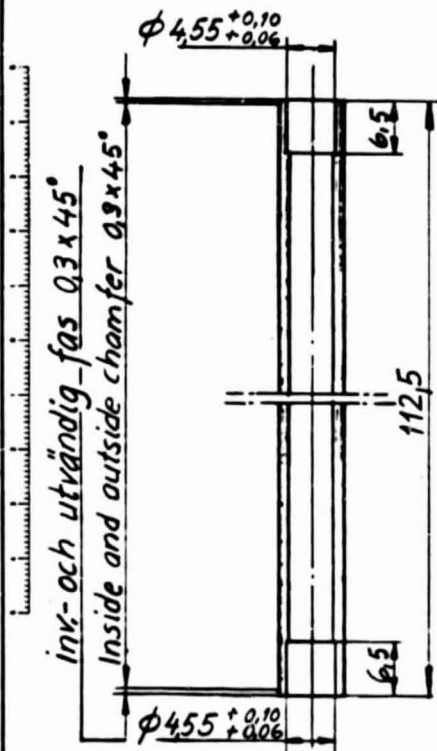
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Tillstånd Rev. till	Ändr. nr. Rev. no.	Laga i teckning	Bestämning Description
	△		



skala 2:1
Scale 2:1

skala 1:1
actual size

Då ej annat anges gälla: To be valid unless otherwise specified	→	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. radier 0.5 Fillet radii 0.5	Skarpa hörn bråna Remove sharp corners	Europ. ans. 	Yttextur Surface roughness	Re μ max
Toleranssystem Tolerance system	ISO	Vikt beräknad/vägt Weight calc./weighed		Redr./Drawn RH 80.02.29	Kontor gr. Design checked: 80.03.14	Prod. gr. Prod. checked	Godk./Approved
 KONSTRUKTÖRSBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material Multimet $\phi 6/4,3$					Skala/Scale 2:1 (1:1)	Grupp/Group 303
	Ersätter/Replaces		Ersatt av/Replaced by			Blad nr/ant. Sheet no/total 1/1	Tillstånd Rev. till A
	Titel Värmarrör Heater tube					Rev. nr / Drawing no 4-17119	

Ingående i samst. ritn. nr 8 3-17069

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Titel: Rev. nr.	Ändr. nr. Rev. nr.	Laga Förändring	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					
<p>Då ej annat anges gäller: To be valid unless otherwise specified:</p>		<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>Inv. håll- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa hörn brutna Remove sharp corners</p> <p>0.2</p>	<p>Europ. sym. ISO</p>	<p>Yttextur Surface roughness</p> <p>Ra μ max 10</p>
<p>Toleranssystem Tolerance system</p> <p>ISO</p>		<p>Vikt beräknad/vikt Weight calc/weight</p>	<p>Ritad/Drawn</p>	<p>Kontroll Design checked</p>	<p>Prod. gr. Prod. checked</p>	<p>Godk. / Approved</p>
<p>Material</p> <p>Multimet $\phi 2 \times 1/3$</p>		<p>Skala/Scale</p> <p>1:1</p>		<p>Grupp/Group</p> <p>303</p>		
<p>Erställt / Replaced</p>		<p>Erställt av / Replaced by</p>		<p>Blad nr / ant. Sheet nro / total</p> <p>1/1</p>		<p>Tillämpad Rev. letter</p>
<p>KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co</p>		<p>Titel Termoelementhylsa Sleeve for thermocouple</p>		<p>Rev. nr / Drawing no. 4-17131</p>		

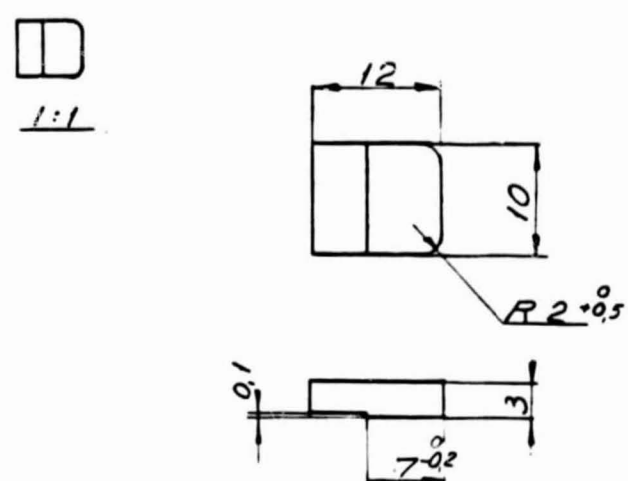
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Ingår i samlat ritn. nr 8

Titled Rev. letter	Andr. nr. Rev. no.	Laga Position	Bestämning Description	Datum Date	Sign	Godk. Approved
	△					



Då ej annat an- gäles: To be valid unless otherwise spec.	→	Toleranser SS 715 medel Tolerances SS 715 medium	Små håll- radier 0.3 Fillet radii 0.3	Skarpa kanter brutna, avsmåda skarpa corners	Europec 200	Yttextur Surface roughness	Ra µ max 10
Toleranssystem Tolerance system	ISO	Vikt beräknad/vikt Weight calc./weight	Revid./Drawn 500320	Kontroll gr. Design checked	Prod. gr. Prod. checked	Godk. / App. event	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material S15 2361		Skala/Scale 2:1		Grupp/Group 303		
	Ersätter / Replaces		Ersatt av / Replaced by		Skad nr / art. Sketch no / letter		
	Titel Klock Boss		Ritn. nr / Drawing no. 4-17134				

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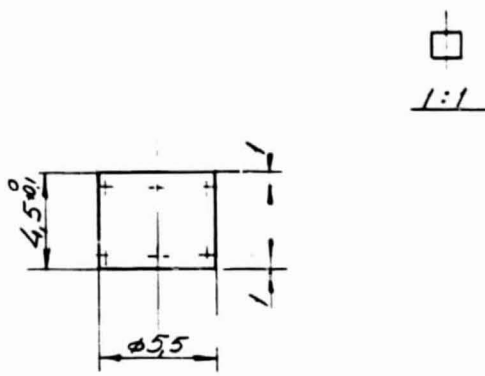
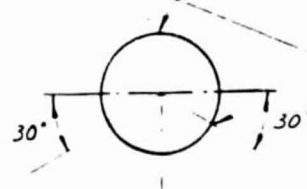


Tillstånd Rev letter	Ändr nr. Rev no.	Läge Position	Beskrivning Description	Datum Date	Sign	Godk. Approved
	△					
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medium Tolerances SS 715 medium	Inre hörn- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners 0.2	Euro pro: 	Yttextur Surface roughness Ra μ max 6.3
Toleranssystem Tolerance system ISO		Vikt beräknad/vikt Weight calc/weight	Ritad/Drawn EC0008 K	K. har gr. Da. gn checked	Prod. gr. Prod. checked	Godk./Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material H531		Stora/Scale 4:1 1:1		Grupp/Group 303
Ersätter/Replaces		Ersatt av/Replaced by		Stora nr./art. Sheet no./total 1/1		Tillstånd Rev letter
Titel Plugg Plug		Ritsk./Drawing no. 4-17135				

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	△						
<div style="text-align: right;">  </div> <div style="text-align: center;">  </div> <div style="position: absolute; top: 520px; left: 640px;"> <p>6 st kärnslog 6 center punch</p> </div>							
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	Inv. hörn- radier 0.5 Fillet radii 0.5	Skarpa kanter bortta Remove sharp corners 0.2	Europe pros 	Ytfinish Surface roughness Ra μ max 10	
Toleranssystem Tolerance system ISO		Vekt beräknad/vägd Weight calc./weighed		Ritad/Drawn 800319	Konstr. gr. Design checked	Prod. gr. Prod. checked Godk. / Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material H531			Skala/Scale 4:1	Grupp/Group 303	
		Ersätter / Replaces		Ersatt av / Replaced by		Blad nr / ant. Sheet no / total 1/1	Tillstånd Rev. letter
		Titel Plugg Plug			Ritn. nr / Drawing no. 4-17136		

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på annat sätt obehörigen utnyttjas.

Ingår i smst ritn. nr 8

Tillstånd Rev. letter	Ändr. nr. Rev. no.	Läga Position	Beskrivning Description	Datum Date	Sign	Godk. Approved
	△					
<p>Då ej annat anges gäller: To be valid unless otherwise specified:</p>			<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>Inv. horn- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa kanter brutna Remove sharp corners</p> <p>0.2</p>	<p>Europ. pr. Yttningshet Surface roughness</p> <p>25</p>
<p>Toleranssystem Tolerance system</p> <p>ISO</p>			<p>Vikt beräknad/vägd Weight calc/ weighed</p>	<p>Ritad/Drawn 800415 ✓</p>	<p>Konstr. gr. Design checked</p>	<p>Prod. gr. Prod. checked</p>
<p>Material</p> <p>S15 2333</p>			<p>Skala/Scale</p> <p>1:1</p>		<p>Grupp/Group</p> <p>303</p>	
<p>Erstatter/Replaces</p>			<p>Erstätt av/Replaced by</p>		<p>Blad nr/amt. Sheet no/total</p> <p>1/1</p>	<p>Tillstånd Rev. letter</p>
<p>Titel</p> <p>Plåt Plate</p>			<p>Ritn. nr./Drawing no.</p> <p>4-17154</p>			



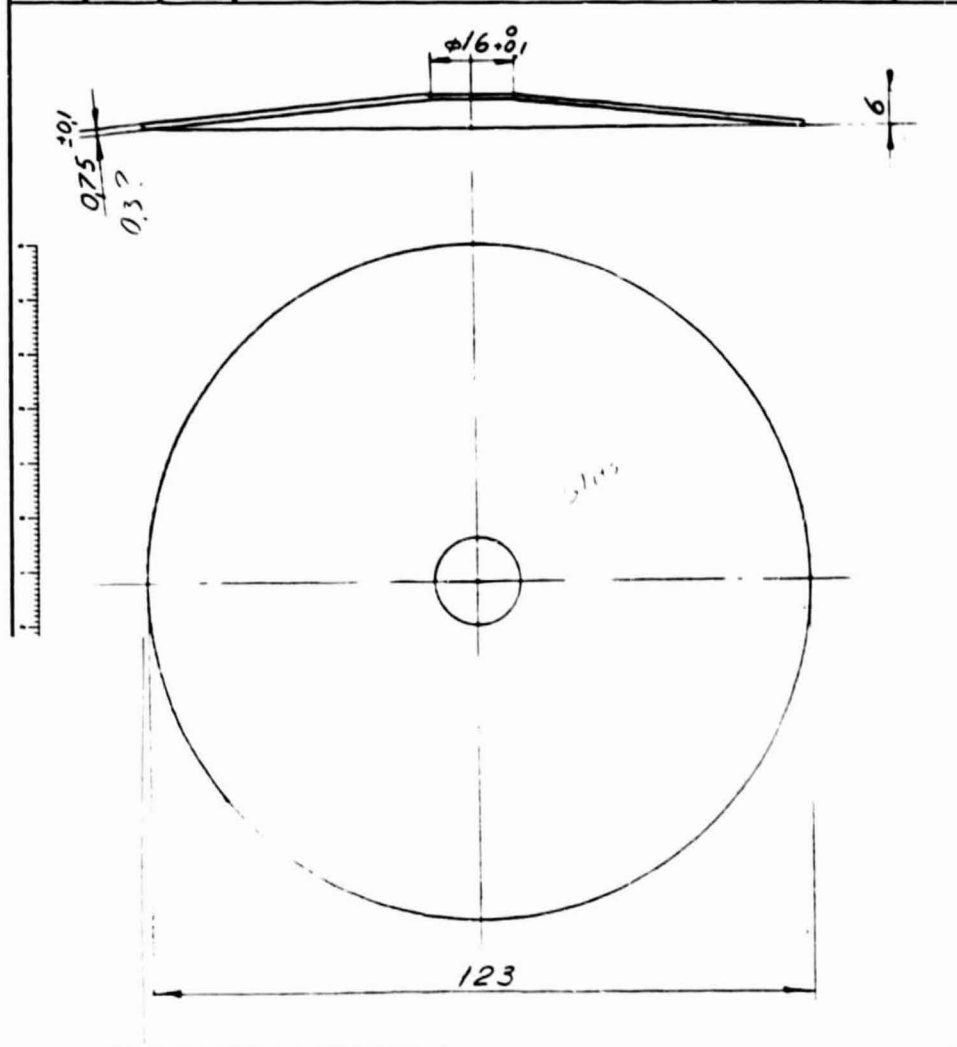
KOMMANDITBOLAGET
UNITED STIRLING
(SWEDEN) AB & Co

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Ute av snitt anges galler. To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. höm- radier 0.5 Fillet radii 0.5	Skarpa hörn brutna Remove sharp corners 0.2	Europ. prov. 	Yttextur Surface roughness Ra µ max 25
Toleranssystem Tolerance system ISO	Vikt bestämd/vägd Weight calc'd/weighted	Ritad/Drawn 800416	Kontrollerad/Design checked	Prod. gr. Prod. checked	Godk. / Approved
	Material S15 2333	Skala/Scale 1/1	Grupp/Group 303		
Ersätter/Replaces	Ersatt av/Replaced by	Bild nr./art. Sheet no./total 1/1	Tittande Rev. letter		
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Titel Plöt Plate	Ritn. nr./Drawing no. 4-17155			

Ingår i smst. ritn. nr. 5

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Ingåår i smär. ritn. nr. 8

Titled Rev. letter	Andr. nr. Rev. no.	Lägs Position	Beskrivning Description	Datum Date	Sign	Godk. Approved
	△					
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	Inv. höj- radier 0.5 Fillet radi 0.5	Skarpa kanter brutna Remove sharp corners 0.2	Europ. pris 	Ytfinhet Surface roughness Ra μ max 10
Toleranssystem Tolerance system ISO		Vikt beräknad/vikt Weight calc./weighed		Ritad/Drawn 800415	Konstr. gr. Design checked	Godk. / Approved
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material S152343		Skala/Scale 1:1		Grupp/Group 303
Ersätter / Replaces		Ersatt av / Replaced by		Skid nr / art. Sheet no / total 1/1		Titled Rev. letter
Titel Löstapp Dowel ?		Rev. nr / Drawing no. 4-17156				

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Ingår i smst ritn. nr 5

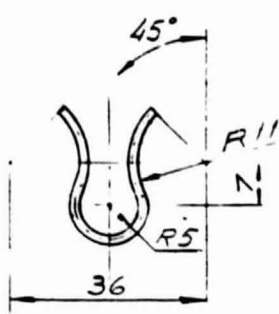


Tillstånd Rev. tiller	Ändr. nr. Rev. no.	L. f. g. Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					
<div style="text-align: center;"> <p style="text-align: center;">A-A</p> </div>						
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	Inv. höm. radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners 0.2	Europ. prov. 	Yttextur Surface roughness Ra µ max 10
Toleranssystem Tolerance system ISO		Vikt beräknad/vägd Weight calc./weighed	Ritad/Drawn 800416	Konstr. gr. Design checked	Prod. gr. Prod. checked	Godk./Approved
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material SIS 1914 eller likv.		Skala/Scale 1:1	Grupp/Group 303	
Ersätter/Replaces		Ersatt av/Replaced by		Blad nr/amt. Sheet no./total 1/1	Tillstånd Rev. tiller	
Titel Fjäderhållare Spring carrier				Ritn. nr/Drawing no. 4-17157		

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Ingår i smält ritn. nr 5

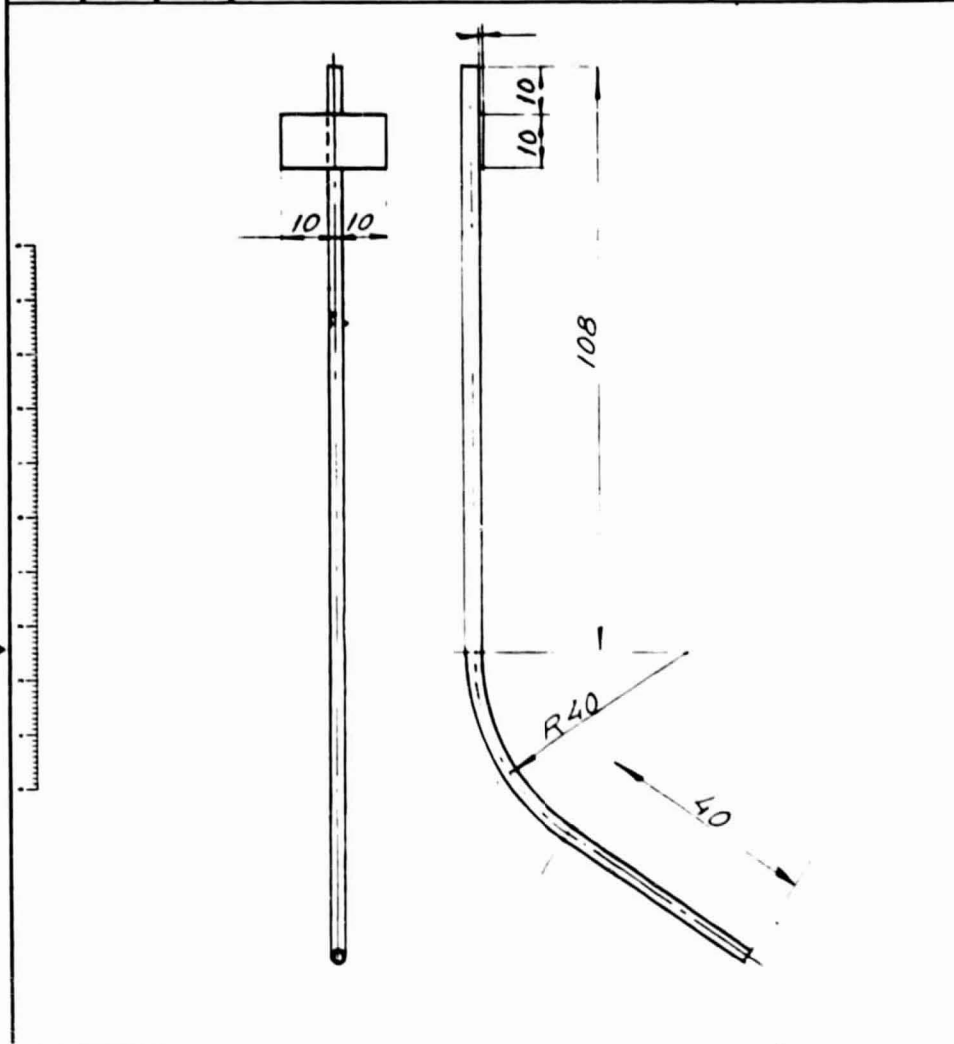
Tillstånd Rev. nummer	Ändr. nr. Rev. no.	Läge Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved	
	△						
							
<p>Då ej annat anges gäller: To be valid unless otherwise specified:</p>			<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>Inv. hörn- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa kanter bruna Remove sharp corners</p>	<p>Europ. pros. </p>	<p>Ytsmåhet Surface roughness Ra μ max 10</p>
<p>Toleranssystem Tolerance system ISO</p>			<p>Vikt beräknad/vägt Weight calc./weighed</p>	<p>Read/Drawn 800416</p>	<p>Konstr. gr. Design checked</p>	<p>Prod. gr. Prod. checked</p>	<p>Godk. / Approved</p>
 <p>KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co</p>			<p>Material SIS 2331 eller likv.</p>		<p>Storlek/Scale 1:1</p>		<p>Grupp/Group 303</p>
<p>Erstat/Replaces</p>			<p>Erstat av/Replaced by</p>		<p>Blad nr./ant. Sheet no./total 1/1</p>		<p>Tillstånd Rev. nummer</p>
<p>Fjäder Spring</p>			<p>Rev.-nr./Drawing no. 4-17158</p>				


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Titelblad Rev. siffer	Ändr. nr. Rev. nr.	Läges Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					



Då ej annat anges gäller: To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. horn- ränder 0.5 Fillet radii 0.5	Skarpa kanter brunna Remove sharp corners 01	Europe pro	Yttemått Surface roughness	Ra µ max
Toleranssystem Tolerance system ISO	Vikt brutovikt/vikt Weight calc/weight	Ritad/Drawn 800420	Kontrollerad Design checked	Prod. gr. Prod. checked	Godk./Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material S15 2333	Skala/Scale 1:1	Grupp/Group 303	Sheet nr./of total 1/1	Titelblad Rev. siffer	
	Erstärkt/Replaces	Erstätt av/Replaced by	Retn. nr./Drawing no. 4-17160			
	Titel Rör för termoelement Tube for thermocouple					

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Tillstånd Rev. till	Ändr. nr. Rev. no.	Läges Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					
<p><i>Gasttät svets</i> <i>Gas-tight welded</i></p> <p><i>Röret provtryckes enl. TS80.009 efter svets</i> <i>Tube to be pressure tested according to TS80.009 after welding</i></p>						
<p>Då ej annat anges gäller: To be valid unless otherwise specified:</p>		<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>Inv. höm- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa kanter brutna Remove sharp corners</p> <p>0.1</p>	<p>Europ. proj.</p>	<p>Ytminnet Surface roughness</p> <p>Ra µ max</p> <p>10</p>
<p>Toleranssystem Tolerance system</p> <p>ISO</p>		<p>Vikt beräknad/vägd Weight calc./weighed</p>		<p>Ritad/Drawn 800416</p> <p>↓</p>	<p>Kontroll gr. Design checked</p>	<p>Prod. gr. Prod. checked</p> <p>Godk./Approved</p>
<p>KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co</p>		<p>Material</p> <p>Multimet $\phi 2 \times 1,3$</p>		<p>Skala/Scale</p> <p>2:1 1:1</p>		<p>Grupp/Group</p> <p>303</p>
		<p>Erställt av/Replaces</p>		<p>Erställt av/Replaced by</p>		<p>Blad nr / ant. Sheet no / total</p> <p>1/1</p>
		<p>Titel</p> <p>Termoelementhylsa Sleeve for thermocouple</p>		<p>Rev. nr / Drawing no.</p> <p>4-17161</p>		

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Tillstånd Rev. letter	Ändr. nr. Rev. no.	Lägg Position	Bestämning Description	Utskrift Date	Sign.	Godk. Approved
	△					
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	Inre hörn- radier 0.5 Fillet radii 0.5	Skarpa hörn brutna Remove sharp corners	Euro p. 10 	Ytfinish Surface roughness Ra μ max
Toleranssystem Tolerance system ISO		Vikt beräknad/vägd Weight calc./weighed	Ritad/Drawn 800416	Kontrollerad Design checked	Prod. gr. Prod. checked	Godk./Approved
		Material			Skala/Scale 1:1	Grupp/Group
Ersätter/Replaces		Ersätts av/Replaced by			Blad nr./ant. Sheet no./total 1/1	Tillstånd Rev. letter
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Titel Rör för termoelement smst Tube for thermocouple Assy			Ritn. nr./Drawing no. 4-17162	

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Tillstånd Rev letter	Ändr nr. Rev no.	Läge Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					

Då ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. höm- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners 02	Europ. prot. 	Ytfinhet Surface roughness Ra µ max 10
Toleranssystem Tolerance system ISO	Vikt beräknad/vägd Weight calc./weighed	Risat/Drawn 800415	Konstr. gr. Design checked	Prod. gr. Prod. checked	Godk. / Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material S15 2333		Skala/Scale 1:1		Grupp/Group 303
	Ersätter / Replaces		Ersatt av / Replaced by		Blad nr / ant. Sheet no / total 1:1
	Titel Rör för termoelement Tube for thermocouple				Rev. nr / Drawing no. 4-17163

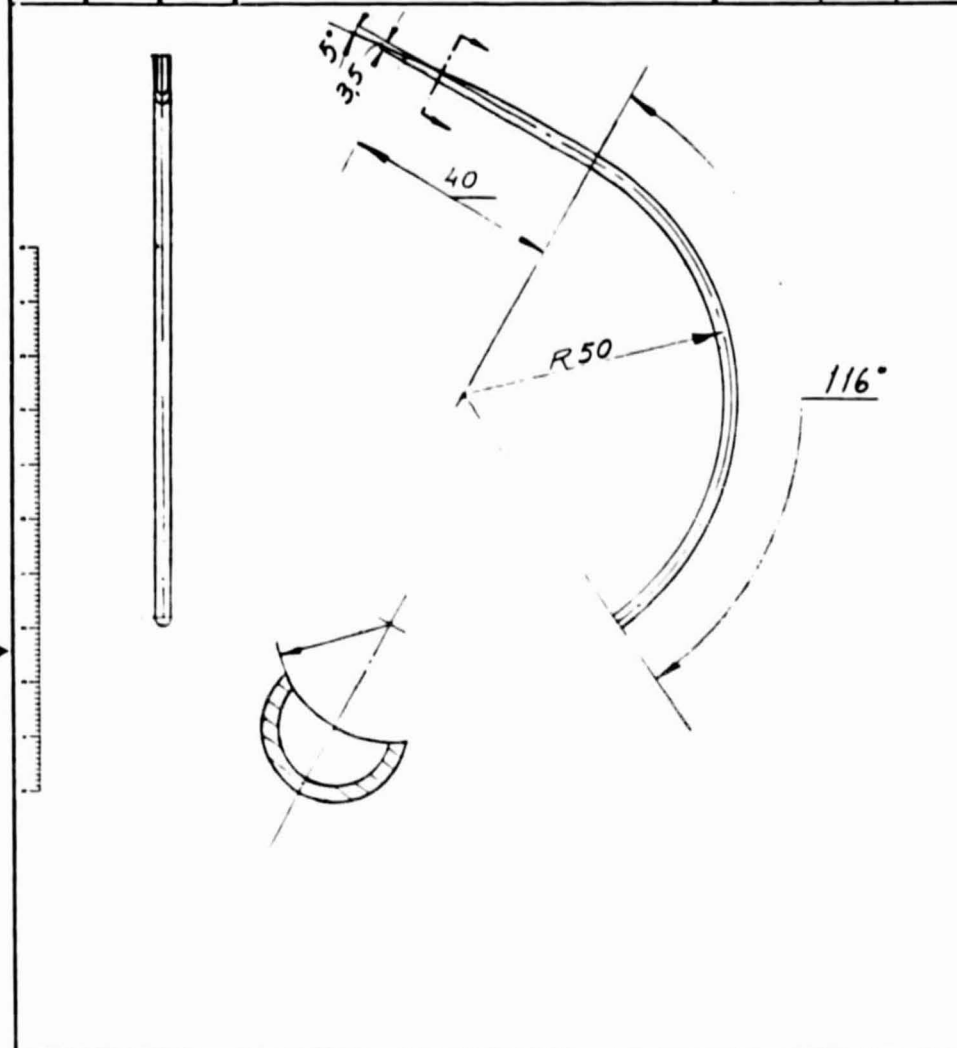
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	△					

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Toleranssystem Tolerance system ISO	Vikt beräknad/vikt Weight calc./weight	Ritad/Drawn 800415/L	Kontroll gr. Design checked	Prod. gr. Prod. checked	Godk. / Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material SIS 2333			Skala/Scale 1:1	Grupp/Group 303
	Ersätter/Replaces		Ersatt av/Replaced by	Blad nr./ant Sheet no./total 1/1	Teknisk Rev. tecken
	Titel Rör för termoelement Tube for thermocouple			Ritn. nr./Drawing no. 4- 17164	

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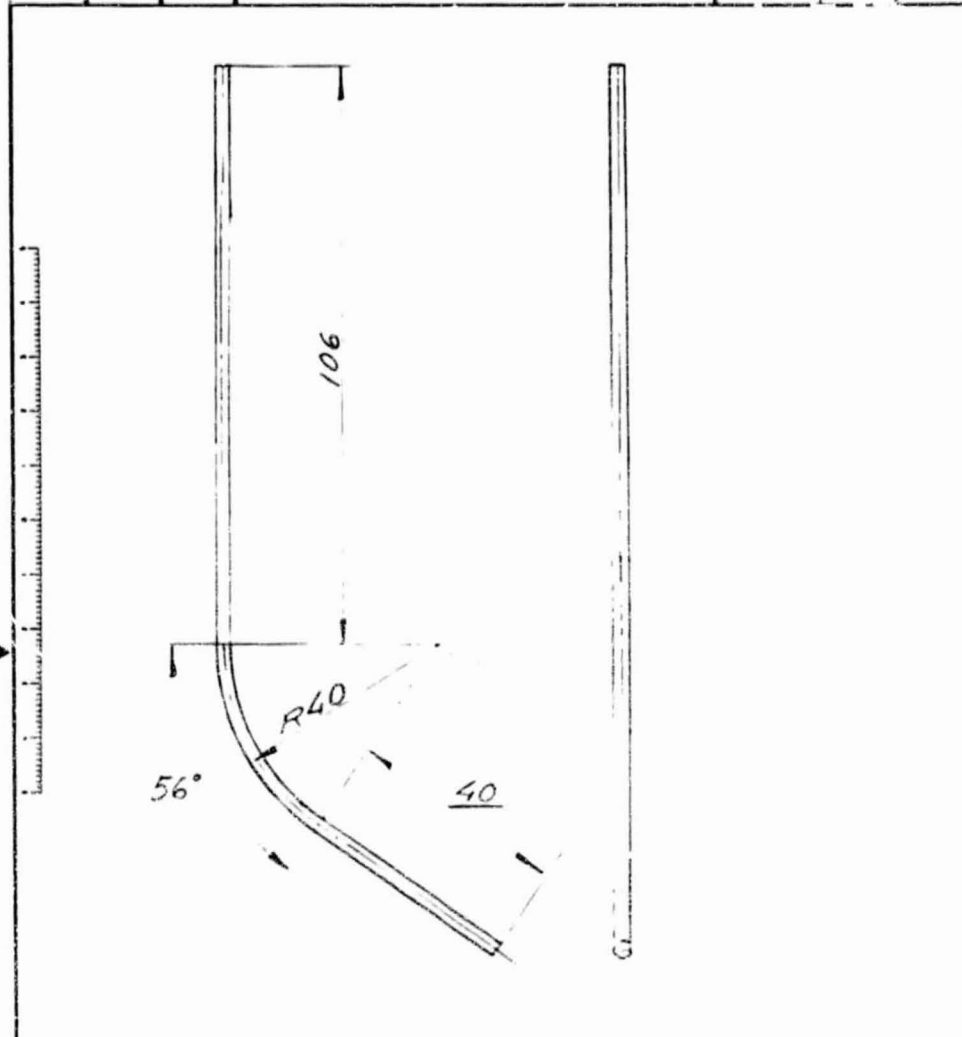
Titelblad Rev. letter	Ändr. nr. Rev. no.	Läga Position	Bestämning Description	Datum Date	Sign.	Godk. Approved
	A					
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	inv. höm- radier 0.5 Inset radii 0.5	Skarpa kanter börjas Remove sharp corners	Europ. pr. 16	Yttermått Surface roughness
Toleranssystem Tolerance system		Vikt beräknad/vägt Weight calc'd/weight		Ritad/Drawn 800416	Kontroll gr. Design checked	Grödd. / Approved
Material		S15 2333 Rör $\phi 26 \times 20$		Skala/Scale		Grupp/Group
Ersätter/Replaces		Ersatt av/Replaced by		Blad nr./art Sheet no./type		Titelblad Rev. letter
Titel Rör för termoclement Tube for thermocouple		Blad nr./art Sheet no./type		Ritad/Drawing no.		
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co				4-17165		


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Technical Rev. no.	And. nr. Rev. no.	Large Position	Revisning Description	Date	Sign	Good. Approved
	△					



D4 ej annat anges gäller To be used unless otherwise specified	→	Tolerance: SS 719 maximum Tolerance: SS 719 maximum	Inv. diam. radius 0.5 Flat radii 0.5	Skarpa vinklar brytas Remove sharp corners 0.1	Europ. pris ④	Typiskast Surface roughness Ra 1.6 max
Toleranssystem Tolerance system ISO		Välj beräknad vikt Wt. to calc. weight	Rätt/Dropp 800415	Kontroll Design checked	Prövad Proof checked	Godkänd Approved
		Material SIS 2333			Skala/Scale 1:1	Grupp/Group 303
KOMMANDITÄBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Erskänks/Replaces	Erskänks/Replaces by		Skala/mått Skala/mått 1/1	Typiskast Rätt/Korrekt
		För för termoelement Tube for thermocouple			Rätt nr/Dra. sig. nr. 4-17166	

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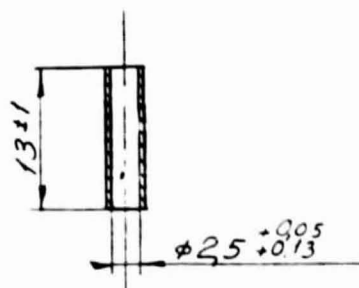
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Tillstånd Rev letter	Andr nr Rev nr	Läge Position	Bestämning Description	Datum Date	Sign	Godk. Approved	
	△						
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium		inv. hörn- rader 0.5 Fäst rader 0.5	Skarpa kanter brutna Remove sharp corners 0.1	Ytämhet Surface roughness Re μ max 25	
Toleranssystem Tolerance system ISO		Vikt beräknad/vägd Weight calc/weighted		Ritad/Drömd 800415	Konstr gr Design checked	Prod gr Prod checked Godk./Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material SIS 2333		Skala/Scale 1:1		Grupp/Group 303	
		Ersätter/Replaces		Ersatt av/Replaced by		Blad nr/an Sheet no/total 1/1	Tillstånd Rev letter
		Titel Låsplåt Lock plate		Ritn nr/Drawing no 4-17167			

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	Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc./weighed	Ritad/Drawn	Konstr. gr. Design checked	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material S152333 Rör Ø 32x24		Skala/Scale 1:1		Grupp/Group 303
	Ersätter/Replaces		Ersatt av/Replaced by		Blad nr./ant. Sheet no./total 1/1
	Titel Hylsa Sleeve		Rev. nr./Drawing no. 4-17168		

Ingår i serie nr. 1

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Titeländ Rev. letter	Andr. nr. Rev. no.	Läge Position	Beskrivning Description	Datum Date	Sign.	Godk. Approved
	△					

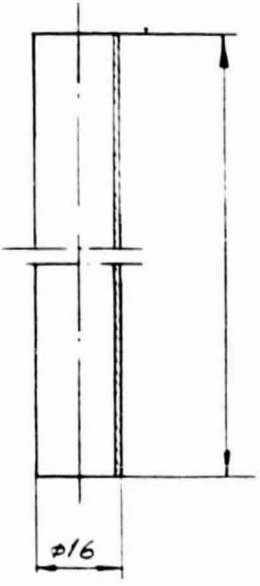

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Toleranssystem Tolerance system ISO	Vikt beräknad/vägd Weight calc./weighed	Ritad/Drawn 800415 	Kontrollerad/Design checked	Prod. gr. Prod. checked	Godk./Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material SIS 2333	Skala/Scale 1:1		Grupp/Group 303	
	Ersätter/Replaces	Ersatt av/Replaced by	Blad nr./ant. Sheet no./total 1/1	Titeländ Rev. letter	
	Titel Låsplåt Lock plate		Ritn. nr./Drawing no. 4-17169		

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Tillstånd Rev letter	Ändr nr Rev no	Läge Position	Bestämning Description	Datum Date	Sign	Godk. Approved
	△					
						
Då ej annat anges gäller: To be valid unless otherwise specified.			Toleranser SS 715 medel Tolerances SS 715 medium	Inv. hörn- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners 0.2	Ytjämnhet Surface roughness Ra μ max 25
Toleranssystem Tolerance system ISO			Vekt beräknad/vägd Weight calc/weighted	Ritad/Drawn 800416 ✓	Konstr. gr. Design checked	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			Material SIS2333 Rör 16x1		Skala/Scale 1:1	Grupp/Group 303
Ersätter/Replaces			Ersätts av/Replaced by		Blad nr/ant. Sheet no/total 1/1	Tillstånd Rev letter
Titel Rör Pipe			Ritn. nr/Drawing no. 4-17171			

Drawings

ASE Mod I, Hot Engine System

- Sub-system Layouts

 - 1-S-1281 Heater Housing Layout

- System Details (To be finalized with manufacturer)

- Supporting Test Object Assemblies

 - 1-73561 Flow Distribution Test Rig Assembly

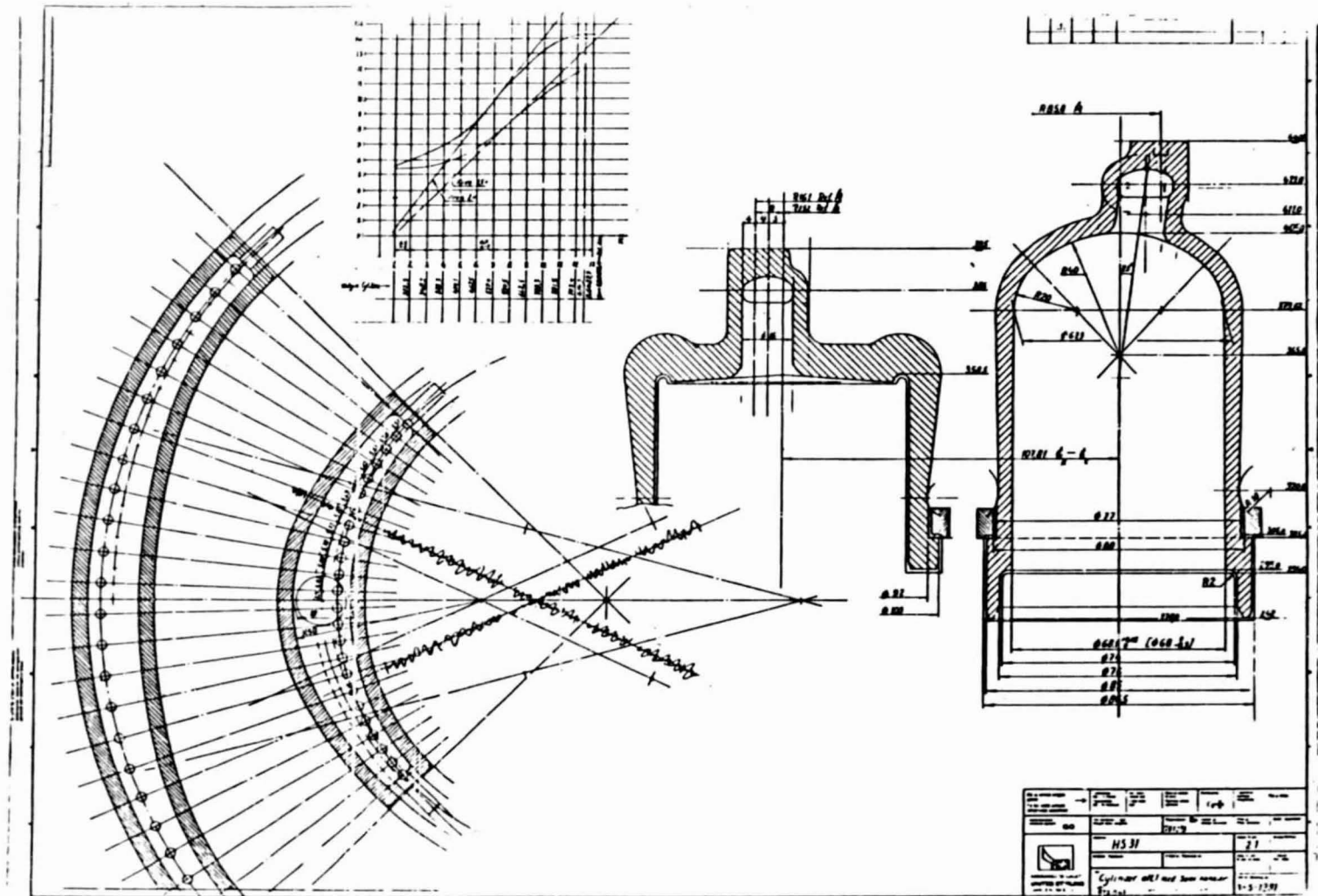
 - Photos of the Assembly

 - 2-73521 Heat Transfer Test Object (1st Tube Row)

 - 2-73522 Heat Transfer Test Object (2nd Tube Row)

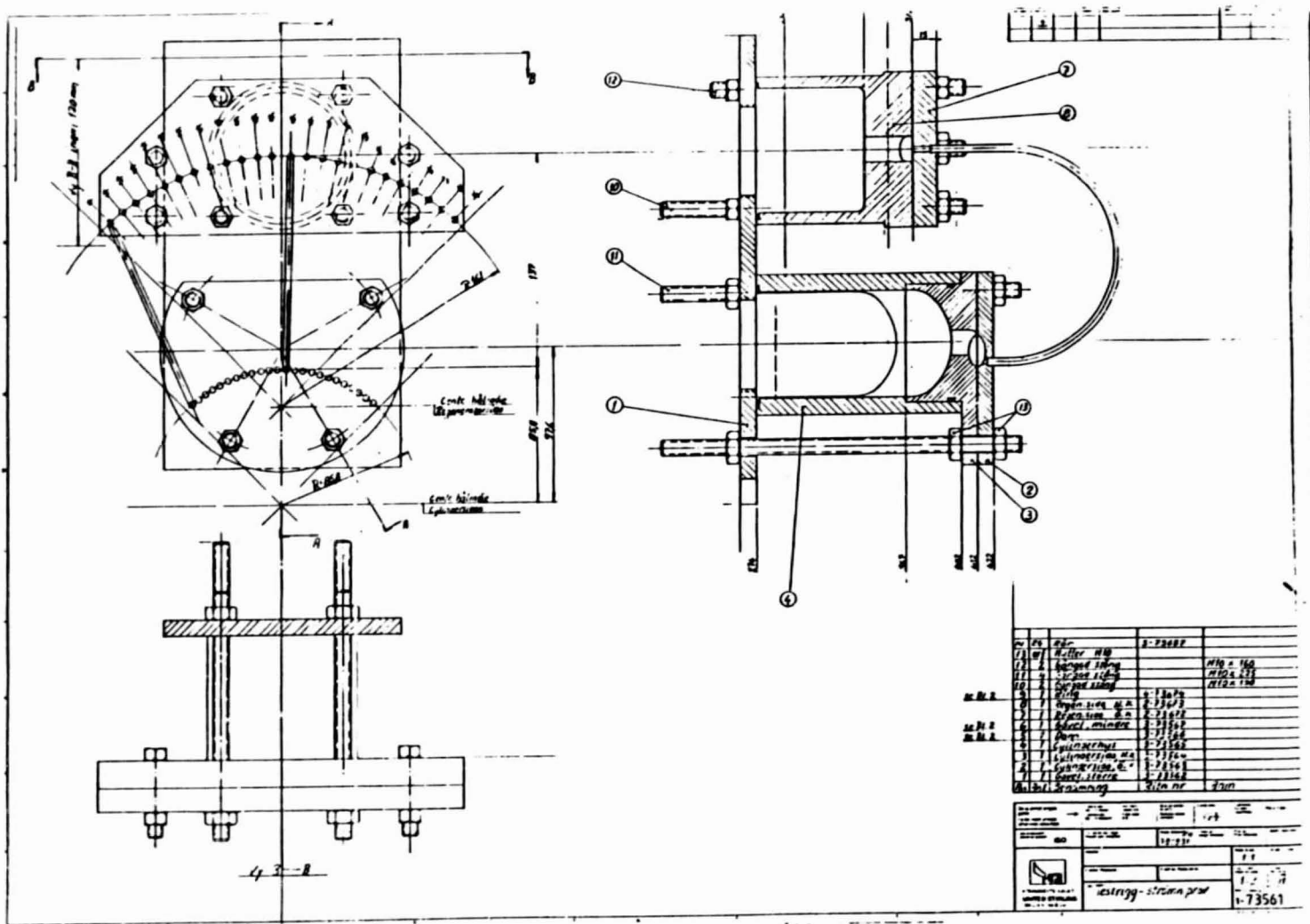
 - 2-S-1264 Joining Test Object

 - 2-S-1174 Retainer Ring Test Ass'y

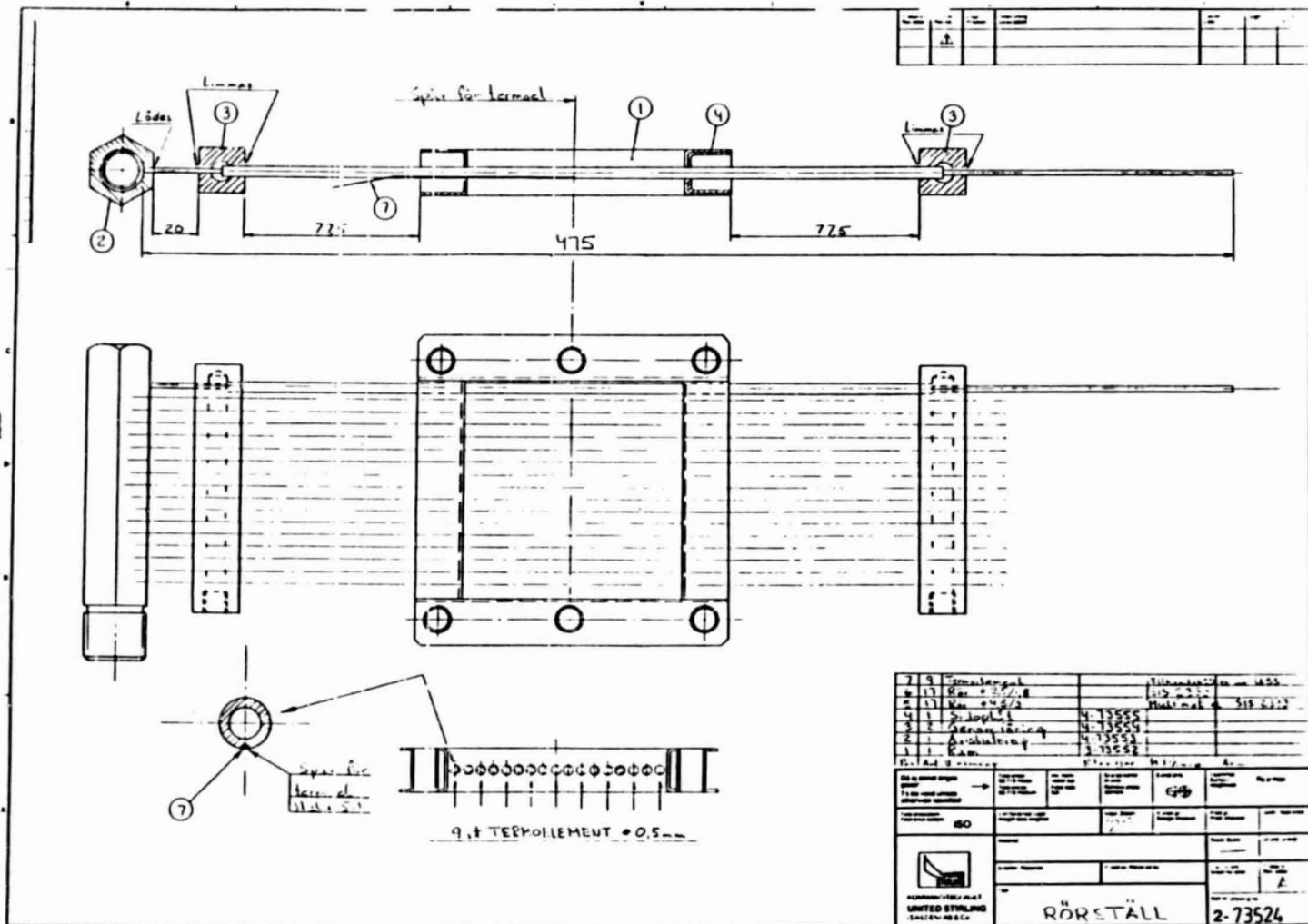


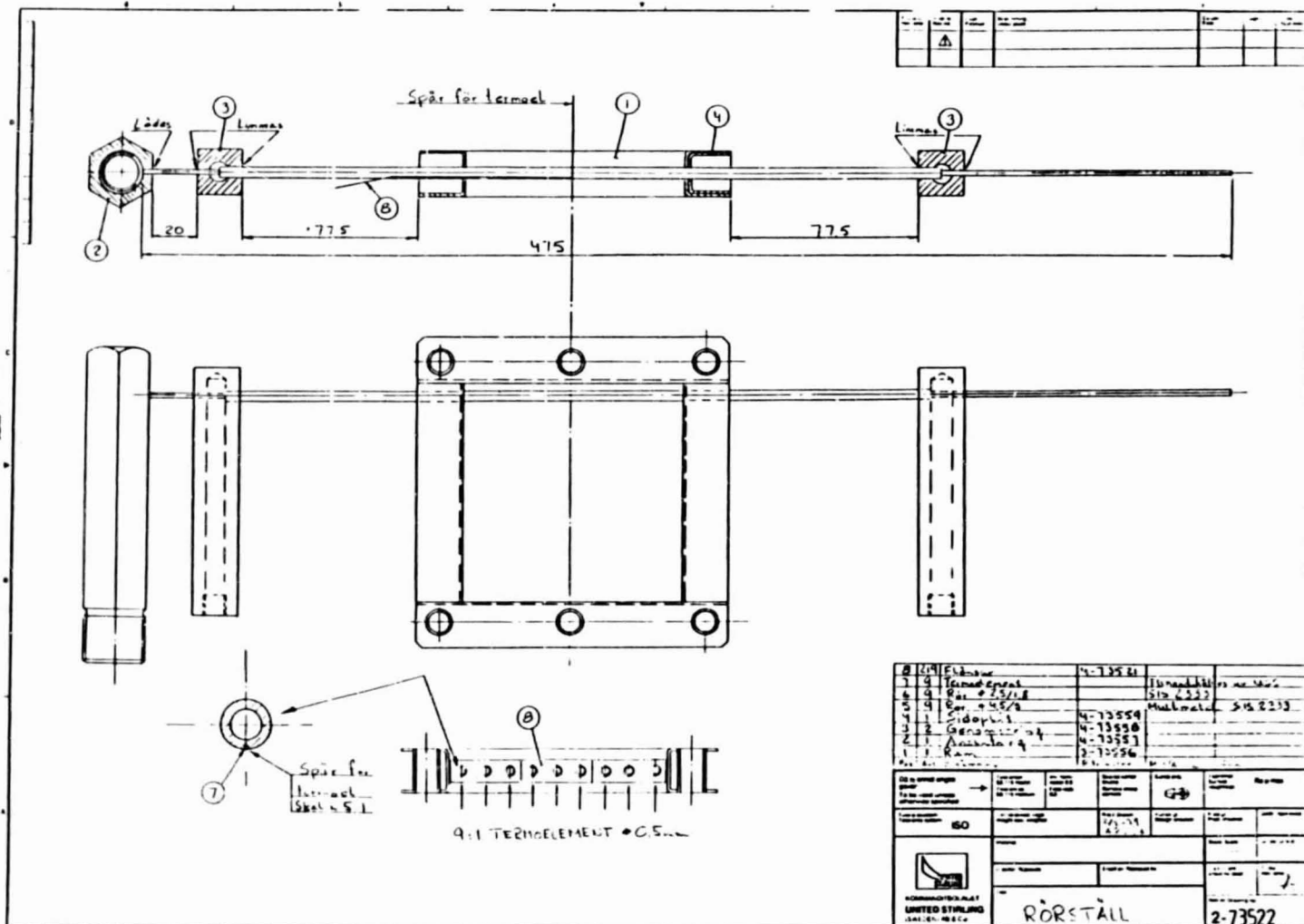
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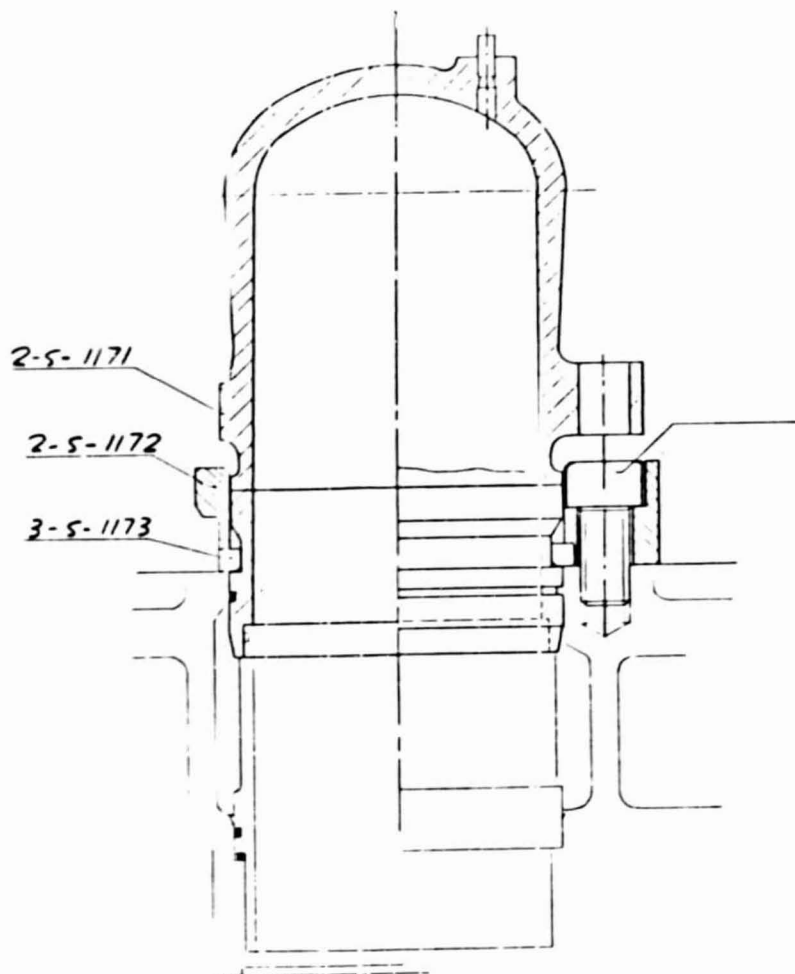
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Dwg. is revised single piece To be used unless otherwise specified	Drawing No. 1171 Rev. 1	Date 11/1/54	Drawing No. 1171 Rev. 1	Date 11/1/54	Drawing No. 1171 Rev. 1
ISO	1171	11/1/54	11/1/54	11/1/54	11/1/54
 UNITED STIRLING LONDON, ENGLAND	"Cylinder corp mid f 4-215 PROVTRYCEN ANCRD	11/1/54	11/1/54	11/1/54	11/1/54
2-S-1174					11/1/54

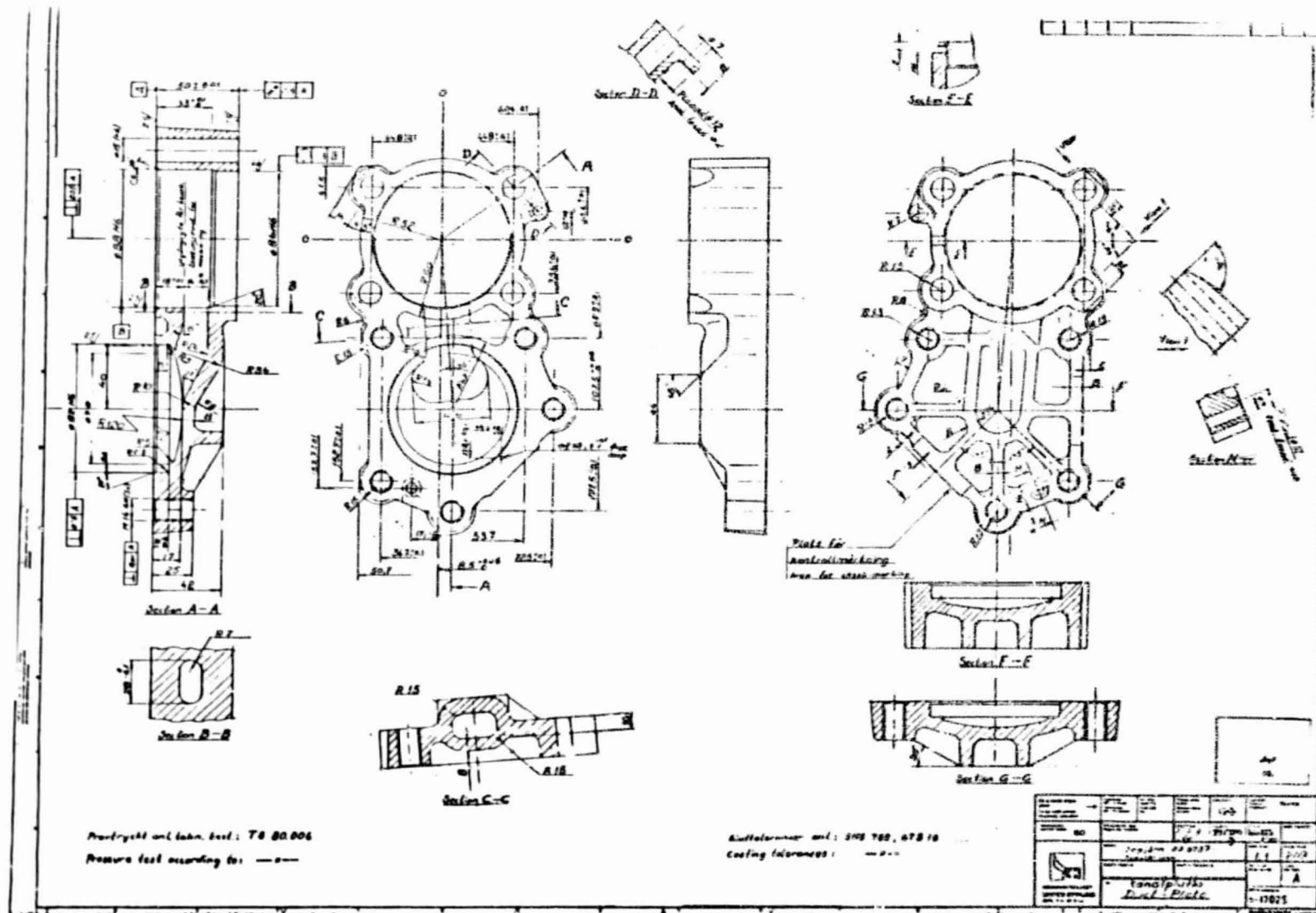
C.6 Drawings - Update

1-17025	Duct Plate
1-17045	Water Jacket (Sheet 1)
1-17045	" "
1-17112	Crosshead Guide
1-17128	" " "
2-17126	Dummy Head Mod I
3-17067	Piston Foot
3-17110	Flange
3-17111	"
3-17113	Ring
3-17114	"
3-17117	Dome, Lower Part
3-17124	Dummy Regenerator Housing
3-17125	Cylinder Cover No. 2 & 4
3-17127	Cylinder Cover No. 1 & 3
3-17132	Curved Tube
3-17141	Dummy Gas Cooler
3-17176	Bushing
4-17108	Stud Bolt
4-17109	" "
4-17122	Nut
4-17133	Curved Tube
4-73836	Fixture

C.6 Drawings

ASE Mod I, Cold Engine System

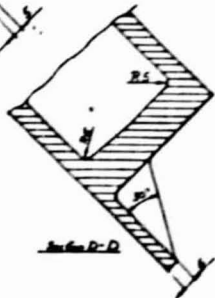
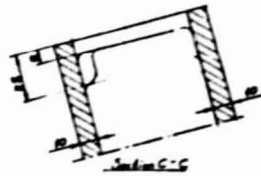
- 1-S-1336 Water Jacket, Welded Steel, Alt. Prel. Scheme
- 1-17044 Basic Check Valve
- System Details (To be finalized with the manufacturer)
 - 1-17045 Water Jacket (2 Sheets)
- Supporting Test Object Assemblies
 - 2-73544 Main Bolting Test Assembly
 - 2-S-1174 Retainer Ring Test Assembly



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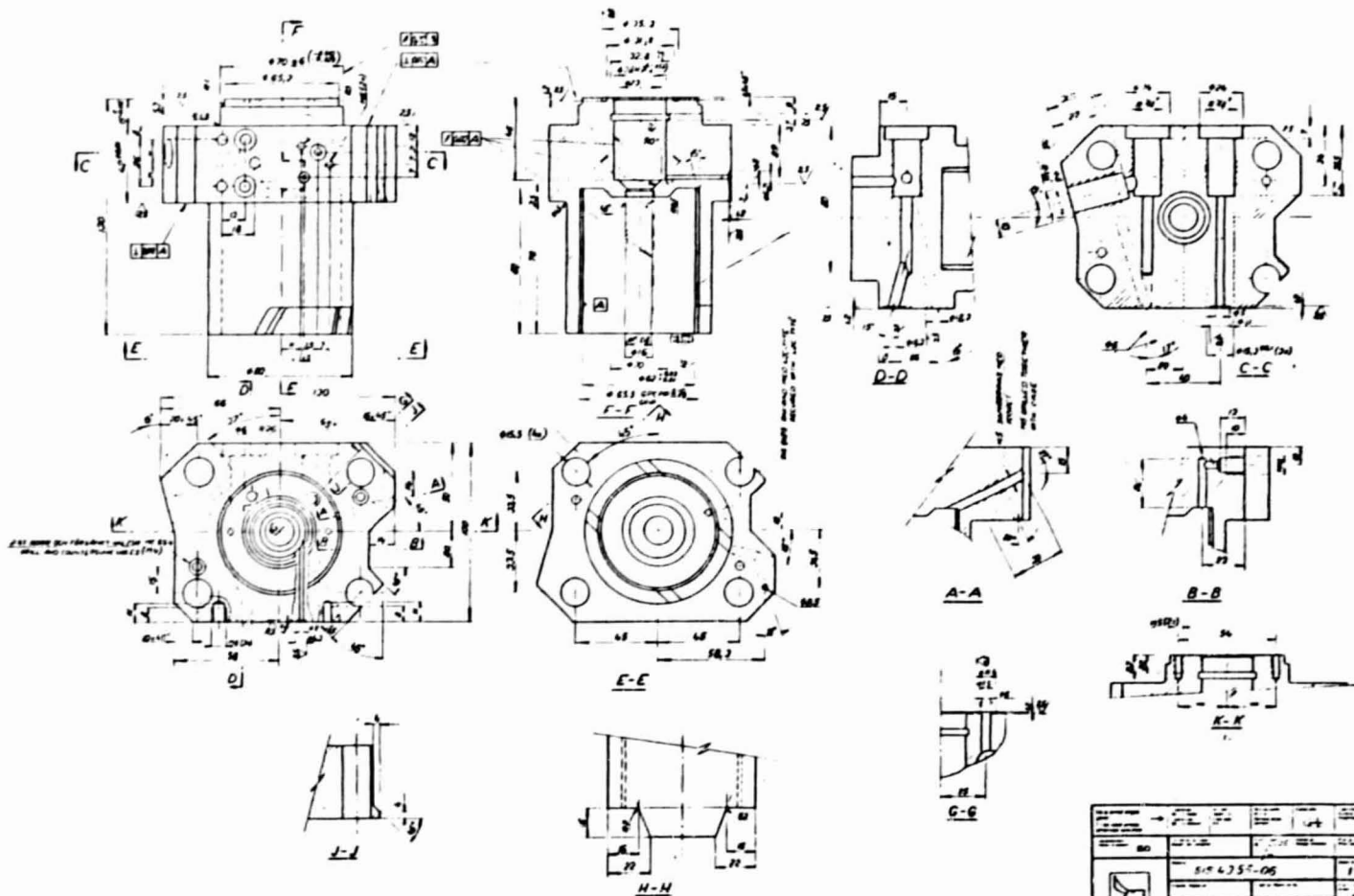
Gjuttoleranser gnl. SWS 702 STAB
Castling tolerances — B —





1. Name of the person 2. Address 3. City 4. State 5. Zip 6. Phone	7. Date 8. Time 9. Location 10. Weather 11. Wind 12. Sea 13. Visibility 14. Clouds 15. Temperature 16. Humidity 17. Pressure 18. Direction 19. Speed 20. Altitude 21. Depth 22. Current 23. Tides 24. Swells 25. Waves 26. Ice 27. Fog 28. Rain 29. Snow 30. Hail 31. Thunder 32. Lightning 33. Wind 34. Sea 35. Visibility 36. Clouds 37. Temperature 38. Humidity 39. Pressure 40. Direction 41. Speed 42. Altitude 43. Depth 44. Current 45. Tides 46. Swells 47. Waves 48. Ice 49. Fog 50. Rain 51. Snow 52. Hail 53. Thunder 54. Lightning	55. Name 56. Address 57. City 58. State 59. Zip 60. Phone 61. Date 62. Time 63. Location 64. Weather 65. Wind 66. Sea 67. Visibility 68. Clouds 69. Temperature 70. Humidity 71. Pressure 72. Direction 73. Speed 74. Altitude 75. Depth 76. Current 77. Tides 78. Swells 79. Waves 80. Ice 81. Fog 82. Rain 83. Snow 84. Hail 85. Thunder 86. Lightning 87. Wind 88. Sea 89. Visibility 90. Clouds 91. Temperature 92. Humidity 93. Pressure 94. Direction 95. Speed 96. Altitude 97. Depth 98. Current 99. Tides 100. Swells 101. Waves 102. Ice 103. Fog 104. Rain 105. Snow 106. Hail 107. Thunder 108. Lightning
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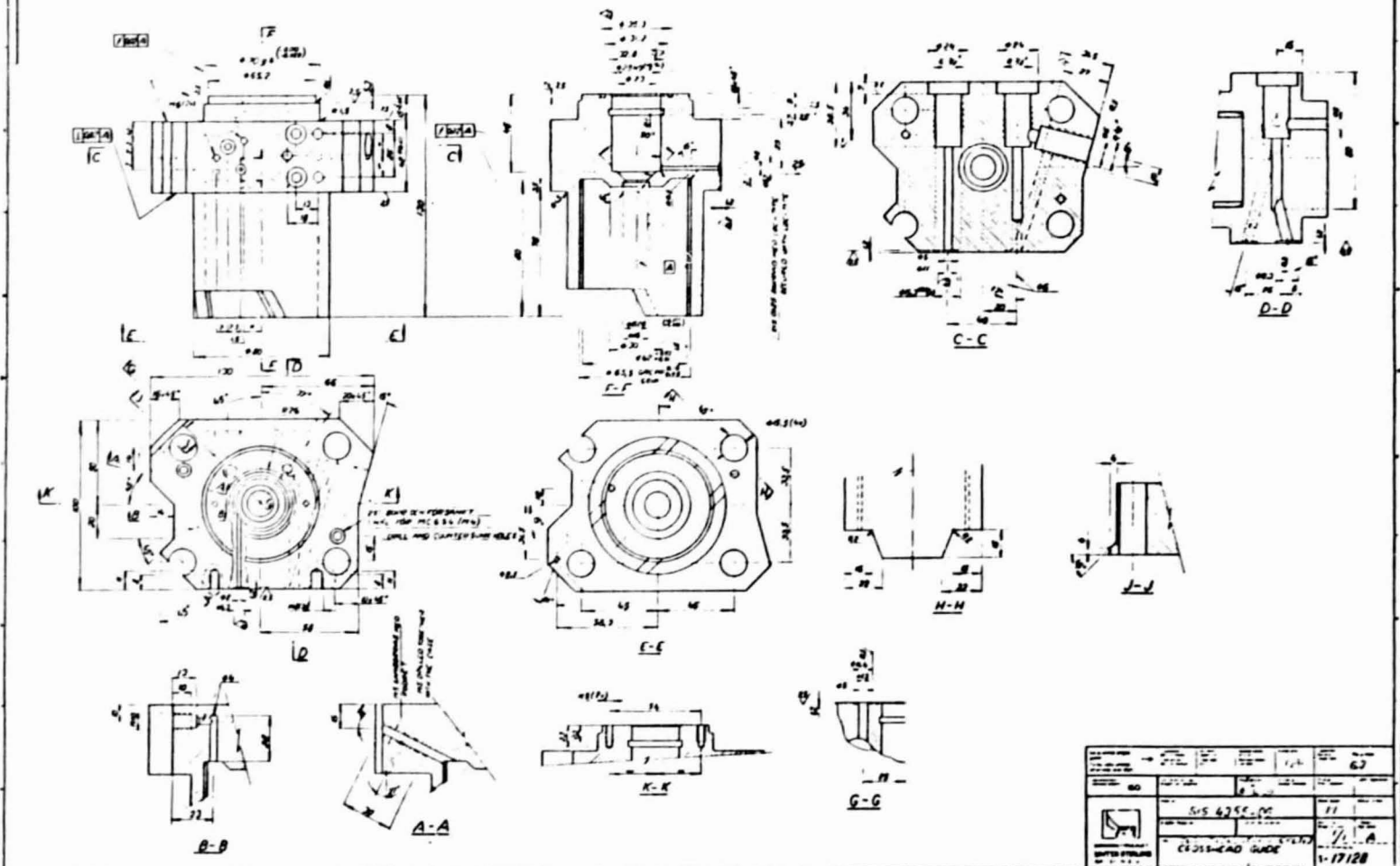
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UNITED STATES GOVERNMENT	OFFICE OF THE SECRETARY OF DEFENSE	WASHINGTON, D.C.	DATE: 6-2
SIC			
	50-435-05	11	A
CLASSIFICATION CODE			1-17-12

111-152

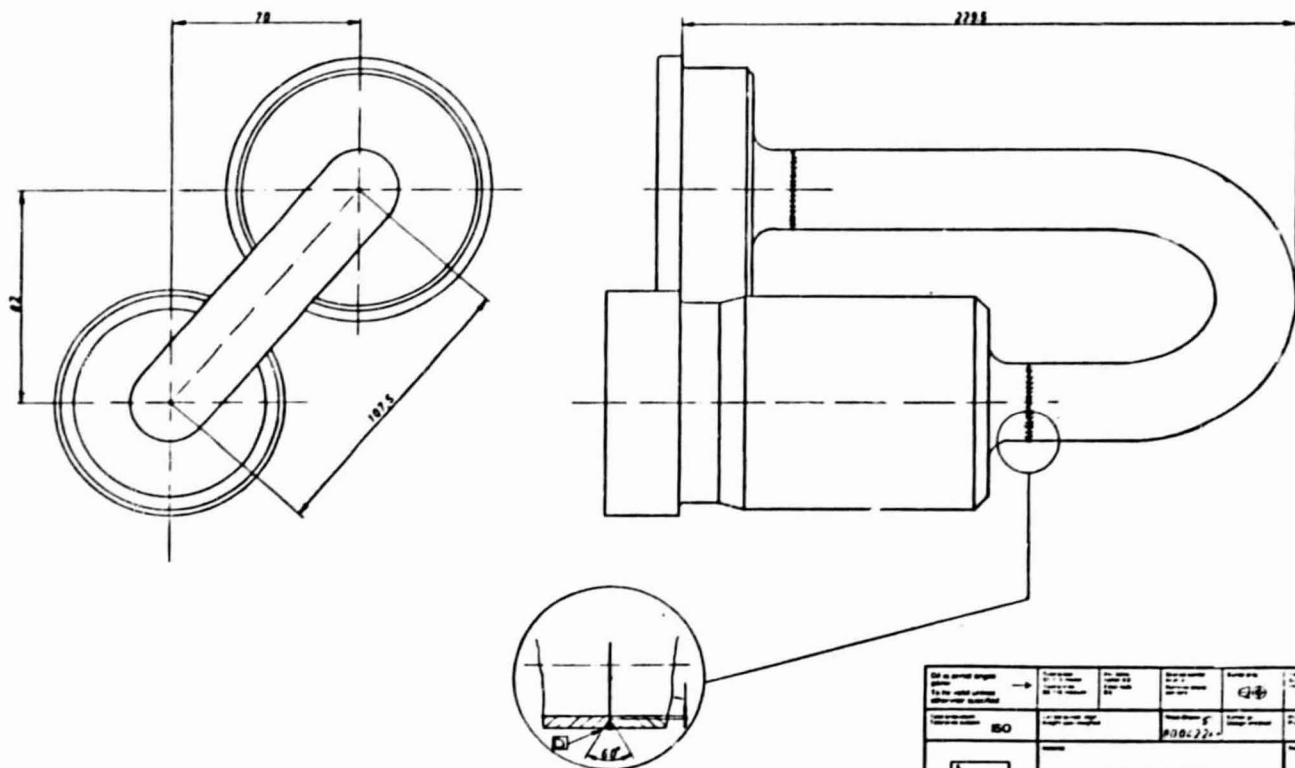
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III-153

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Part No.	Rev.	Material	Quantity	Unit	Notes
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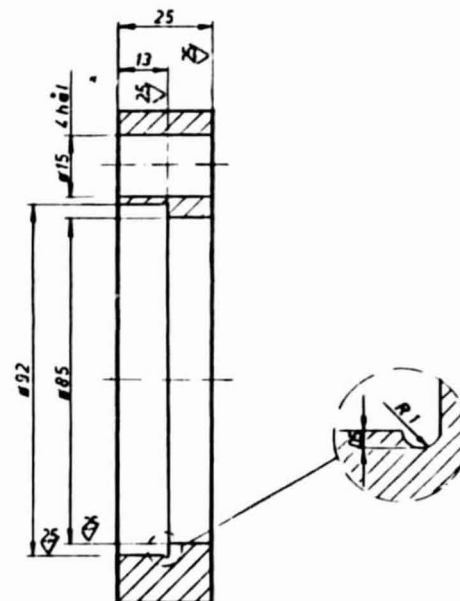
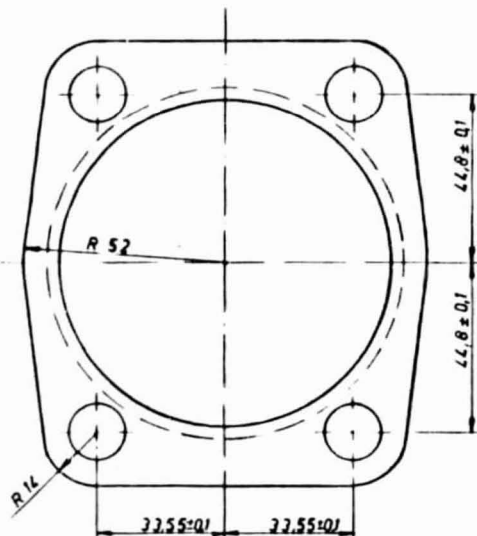
ISO	2-17126	2-17126	2-17126	2-17126	2-17126
 UNITED STIRLING 100-1000 No. 1 Co.		Dummy-heads Mod 1 2-17126			



NOTES:
1. Dimensions are given in millimeters.
2. Dimensions are given in inches and fractions of an inch.
3. Dimensions are given in centimeters and fractions of a centimeter.

NOTES:
1. Dimensions are given in millimeters.
2. Dimensions are given in inches and fractions of an inch.
3. Dimensions are given in centimeters and fractions of a centimeter.

NOTES:
1. Dimensions are given in millimeters.
2. Dimensions are given in inches and fractions of an inch.
3. Dimensions are given in centimeters and fractions of a centimeter.



Material	Size	Weight	Dimensions	Notes	Rev	Date

Datasheet To be used unless otherwise specified.	Tolerances AS 715 standard Tolerances AS 715 standard	Material Steel Steel with 0.5%	Surface Finish Surface Finish	Surface Finish Surface Finish	File # 6.3
Tolerances Tolerances system ISO	Vite hardened steel (weight ratio weight)	Heat/Cross 800212	Control Design checked	Part of Part checked	Date/Approved Date/Approved
Material S15 2541	Surface/Finish Surface/Finish	Heat/Cross Heat/Cross	Part of Part checked	Date/Approved Date/Approved	Date/Approved Date/Approved
Title FLANGE	Date/Approved Date/Approved	Date/Approved Date/Approved	Date/Approved Date/Approved	Date/Approved Date/Approved	Date/Approved Date/Approved



KOMMANDITBOLAGET
UNITED STIRLING
(SWEDEN) AB & Co

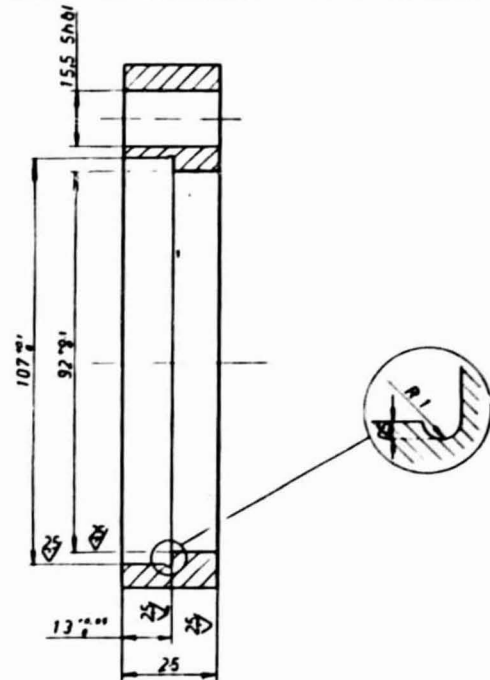
FLANGE

3-17110

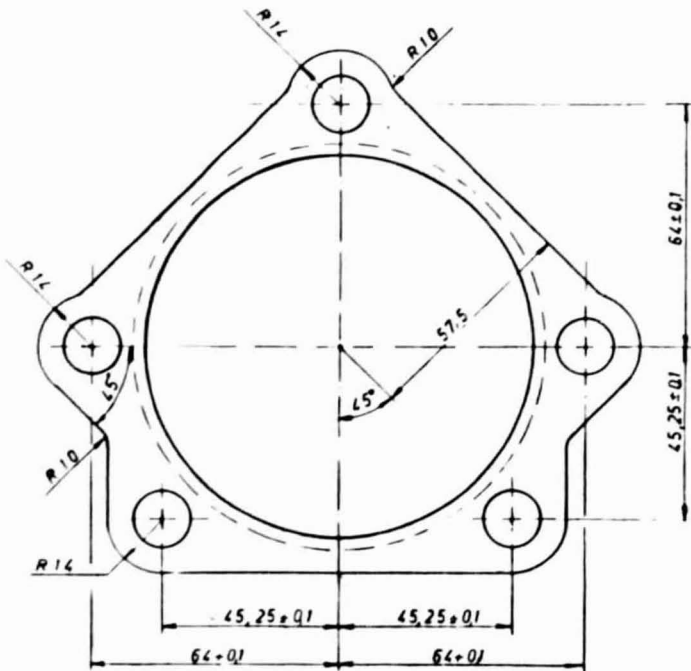
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Material	Part name	Part no.	Part description	Part drawing	Part number	Part title	Part date	Part status



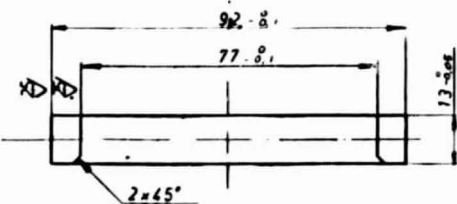
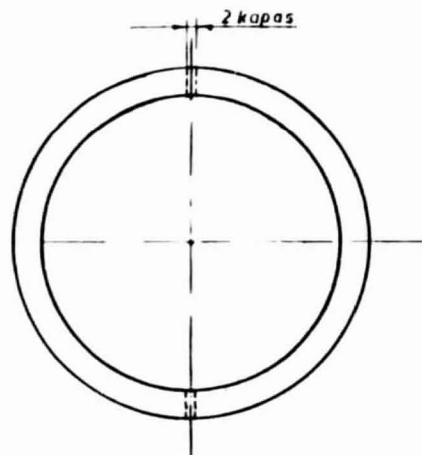
Gå ej över enger eller To be used unless otherwise specified.	ISO	Material S15 2541	Part name Flange	Part drawing 3-17111	Part number 3-17111	Part title FLANGE	Part date 3-17111	Part status 3-17111
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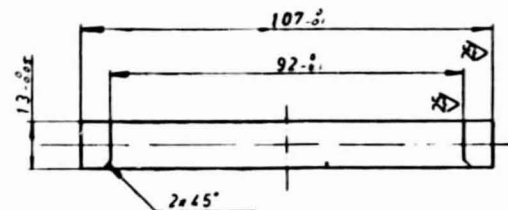
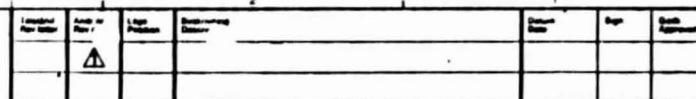
Page 1 of 1



Material	Part No.	Sign	Quantity	Order No.	Qty	Unit
	1					

Dö ej annat än gäller To be valid unless otherwise specified	Toleranser ISO 718 Tolerances ISO 718	Ans ISO 718 Part 1	Skruvar ISO 718 Part 1	Skruvar ISO 718 Part 1	Skruvar ISO 718 Part 1	Skruvar ISO 718 Part 1
	ISO	ISO	ISO	ISO	ISO	ISO
Material  KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Part Number 800222	Part Name RING	Part Size 1:1	Part Weight 3-17113	Part Quantity 1	Part Unit 1

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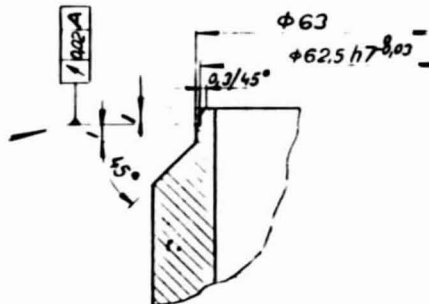
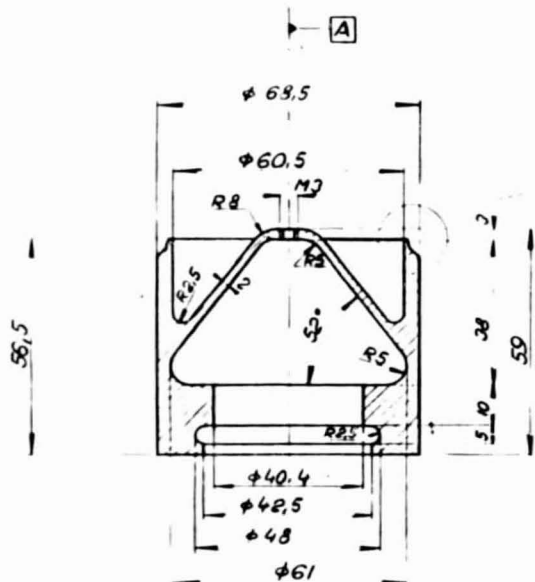
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As signed and shown, dimensions are in millimeters. Dimensions in inches are given in parentheses. Dimensions in feet and inches are given in parentheses. Dimensions in feet and inches are given in parentheses.

Dimensions are given in millimeters. Dimensions in inches are given in parentheses. Dimensions in feet and inches are given in parentheses. Dimensions in feet and inches are given in parentheses.

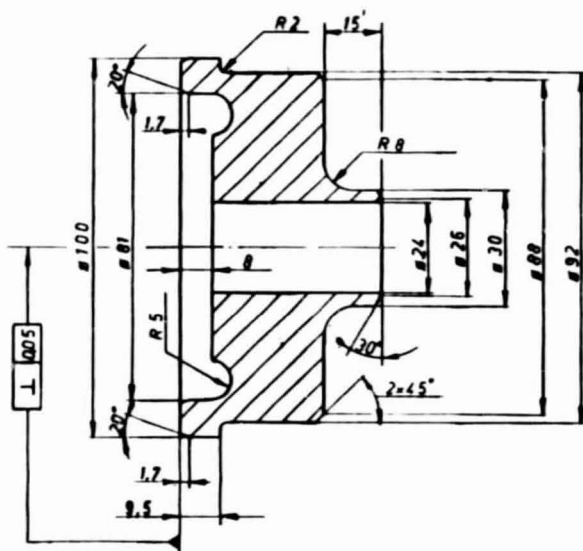
United Stirling AB
KONSTRUKTÖRSÄLAGET
UNITED STIRLING
(SWEDEN) AB & Co



Rev.	By	Date	Description
1	AD		

<p>ÖS är enbart angivet gäller To be noted unless otherwise specified</p>	<p>Material SB 715 medium Tolerances SB 715 medium</p>	<p>Max. heat treatment F max 1040 S 5</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>
<p>Tolerance system ISO</p>	<p>Max. tolerance Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>
<p>Material NIMONIC 80A</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>
<p>United Stirling (SWEDEN) AB & Co</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>	<p>Surface finish Ra max 0.8 Ra max 0.8</p>

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Estimated flow value	Depth at flow gate	Stage Elevation	Discharge Elevation	Estimated Stage	Depth	Depth Elevation
	1.1					

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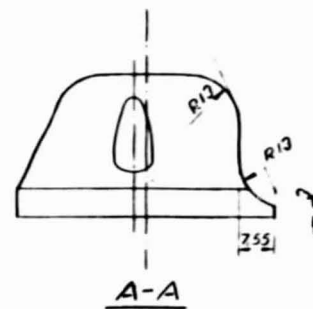
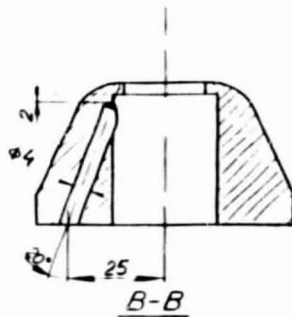
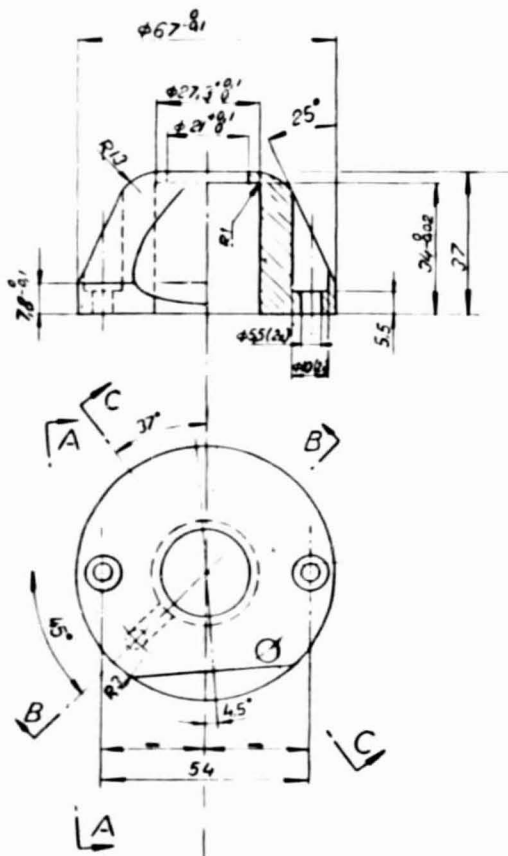
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111-162

ALL DIMENSIONS IN MILLIMETERS
UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE IN MILLIMETERS
UNLESS OTHERWISE SPECIFIED

ALL DIMENSIONS IN MILLIMETERS
UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE IN MILLIMETERS
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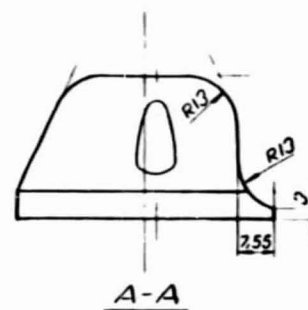
5. See Note 1 on page 1 of drawing




Technical Drawing No.	Revision No.	Page No.	Drawing Date	Author	Appr.	Check Appr.

All in metric angles given To be valid unless otherwise specified	Tolerances ISO 715 Tolerances ISO 715 Tolerances ISO 715	Max. toler. Tolerances Tolerances Tolerances	Surface texture Symbol Surface texture Symbol	Surface texture Symbol Surface texture Symbol	Max. toler. Tolerances Tolerances Tolerances
ISO	ISO 715	ISO 715	ISO 715	ISO 715	ISO 715
Material	SIS 4335-04		Surface texture	Symbol	Max. toler.
Surface texture	1.1		Surface texture	Symbol	Max. toler.
Surface texture	1.1		Surface texture	Symbol	Max. toler.
Surface texture	1.1		Surface texture	Symbol	Max. toler.
Surface texture	1.1		Surface texture	Symbol	Max. toler.
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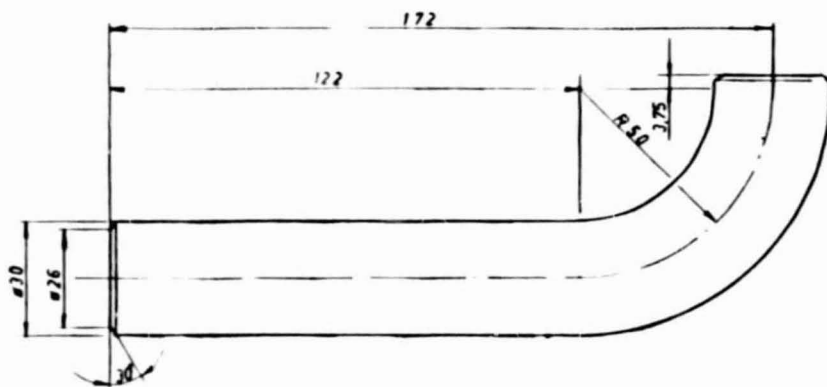


Completed New order	Arrive on Time	Legal Production	Manufacturing Quality	Material Quality	Design	Overall Satisfaction
						

















(It is annual angles gitter To be void unless otherwise specified)	→	Total length 88 715 inches Temperature 88 715 medium	Int. Temp. K 1 Low temp. K 1	Noise level Sound Maximum sharp control	Equip. size 	Temperature Surface Magnitude	Ra & max 25
1 color photograph 1 color photo system	ISO	void has already used Weight ratio control	Heat Chamber 80-92-20 JIS	Control of Design Structure	Point of First Checkpoint	Girth - Approximate	
		Material SIS 4335-04			Scale Scale 1:1	Group Group	
		A-weight Response	B-weight Response by		End-to-end Ratio 1/1	Temperature New value A	
KOMMANTOBOLA JET UNITED STIRLING Ltd (BOWDEN) AG & Co		Tail LOCK CYL 1 & 3 COVER				Ref no Drawing no 3-17127	

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1. Incident Date/Time	2. Incident Location	3. Incident Description	4. Incident Type	5. Incident Status	6. Incident Category
1/1/2024	123 Main St	Vehicle accident	Accident	Completed	Accident

CE is an integral part of the product. To be valid unless otherwise specified.	Type number AS 7118 model Type number AS 7118 model	Max. water capacity 2.5 l/min up to 0.5	Storage location in dry room, away from	Carry bag 	1 year limited warranty (see page 10)	Page 10
1 year warranty (see page 10)	ISO	Max. water capacity 2.5 l/min up to 0.5	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10
	Model/Version 800326	Carry bag 	1 year limited warranty (see page 10)	Page 10	Page 10	Page 10

III-164

Abstract

The following table shows the results of the regression analysis for the dependent variable "Number of children in the household" (N = 1,000). The independent variables are "Age of the head of household" and "Gender of the head of household". The results are presented in the following table:

single 1 serum, min, 1000

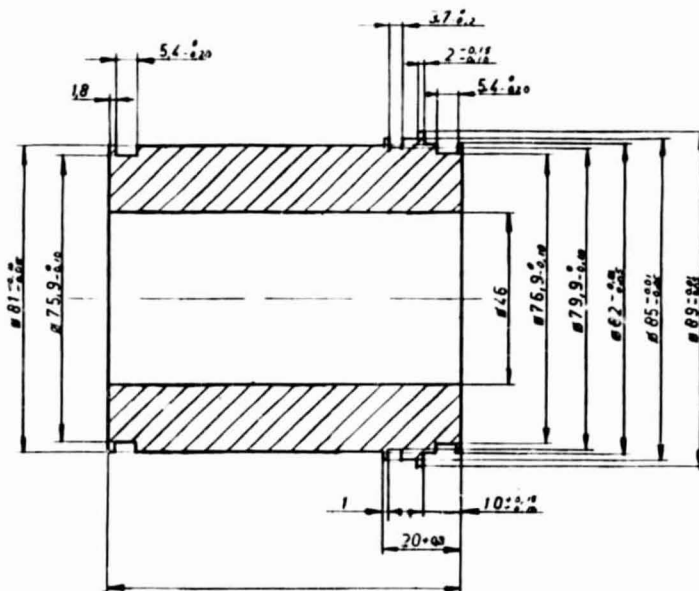
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111-166


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PROJ. 111-166, NR. 2



Issued Date	Rev. Date	Page	Quantity Required	Unit Date	Page	Unit Date

Dwg. serial angles To be valid unless otherwise specified	Tolerances BS 715 metric Tolerances BS 715 standard	Max. toler- ance 0.5 Toler. scale 0.5	Surface finish As shown sharp corners	Surface finish	Tolerances Surface roughness	As per spec
Tolerances To be valid unless otherwise specified	ISO	Vite hardness/edge weight ratio/roughness	Round/Cham- fer/0.04 0.9 A/B	Surface finish/roughness	Proof or Proof thickness	Depth/Height
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material ALUMINIUM	Scale/Scale 1:1	Sheet/Sheet 1	Sheet/Sheet 1	Sheet/Sheet 1	Sheet/Sheet 1
Title DUMMY - GASCOOLER	Drawn by/Revised by	Sheet no./Total Sheet no./Total	Sheet no./Total Sheet no./Total	Sheet no./Total Sheet no./Total	Sheet no./Total Sheet no./Total	Sheet no./Total Sheet no./Total
Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141	Rev. no./Drawing no. 3-17141

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Ingår i smitt. ritn. nr. 8

Titel Rev. Jämf.	Andr. nr. Rev. nr.	Lägg Position	Beskrivning Description	Datum Date	Rev.	Godk. Approved
	△					

Oå ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. håv- rader 6.5 Fillet radi 6.5	Skarpa hörn bortta Remove sharp corners	Surup. prov	Värderat Surface roughness	Ris i rivast 6.3
Toleranssystem ISO	Vikt beräknad/vikt Weight calc./weight	8002082	Read/Drawn	Kontroll av Design checked	Prod. gr. Prod. checked	Godk./Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material				Skala/Scale 1:1	Grupp/Group
	Ersätter/Replaces		Ersatt av/Replaced by		Skal nr/ent. Sheet no./total	Titel Rev. nr
	Titel STUD-BOLT				Ritn./Drawing no. 4-17108	

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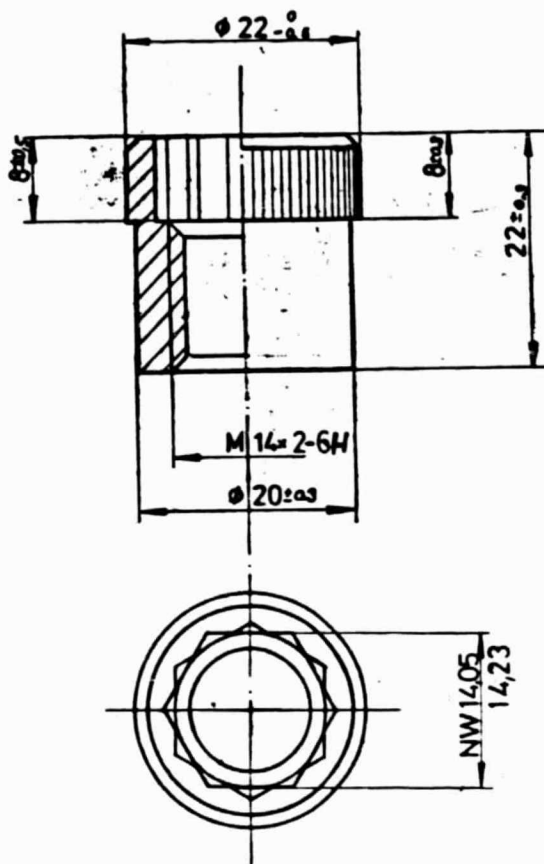
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Ingår i seriet. ritn. nr. 8

Titel/ Rev. betegn.	Rev. nr. Rev. no.	Läge Position	Redigerings Description	Datum Date	Sign. Signature	Godk. Approved
	△					
<p>Då ej annat anges gäller: To be valid unless otherwise specified:</p>		<p>Toleranser SS 715 medel Tolerances SS 715 medium</p>	<p>Inv. håm- radier 0.5 Fillet radii 0.5</p>	<p>Skarpa kanter brutna Remove sharp corners</p>	<p>Europ. sym. </p>	<p>Tyglshöjd Surface roughness Ra µ max 6.3</p>
<p>Toleranssystem Tolerance system ISO</p>		<p>Vikt beräk./vikt Weight calc./weight</p>		<p>Revit./Drawn 80 0208</p>	<p>Konstr. gr. Design checked</p>	<p>Prov. gr. Prov. checked</p>
<p>Material</p>		<p>Erst./Replaces</p>		<p>Skala/Scale 1:1</p>		<p>Grupp/Group</p>
<p>Titel STUD - BOLT</p>		<p>Erst. av/Replaced by</p>		<p>Skal nr./amt. Sheet no./total</p>		<p>Tillstånd Rev. betegn.</p>
<p>KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co</p>		<p>Rev. nr./Drawing no. 4-17109</p>				

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Då ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inre höjdn. radial 0.5 Fillet radii 0.5	Skarpa kanter bråna Remove sharp corners	Svarsp. ans. 	Ytfinhet Surface roughness Ra µ max 6.3
	Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc./weighed	Ritad/Drawn MS 800116	Konstr. gr. Design checked	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material	Skala/Scale 2:1		Grupp/Group	Grupp/Group
	Ersätter/Replaces	Ersätts av/Replaced by	Sked nr./ent. Sheet no./total	Tittad Rev. letter A	A
	Titel NUT MUTTER		Ritad/Drawn no. 4-17122		

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får användas utan tillstånd från
företagets tekniska avdelning.

Titelblad Rev. letter	Ändr. nr. Rev. no.	Läge Position	Beställning Description	Datum Date	Sign.	Godk. Approved
	△					
Då ej annat anges gäller: To be valid unless otherwise specified:		Toleranser SS 715 medel Tolerances SS 715 medium	Inv. inbör- radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners	Europ. prot. 	Ytfinhet: Surface roughness Ra μ max
Toleranssystem Tolerance system ISO		Vikt beräknad/vägt Weight calc./weighed	Ritad/Drawn A/B 800423	Kontrollerad Design checked	Prot. gr. Prot. checked	Godk./Approved
		Material Temeco seamless curved tube DIN 2391/C NBK			Skala/Scale 1:1	Grupp/Group
Eraditerad/Replaced		Eraditerad av/Replaced by			Skid nr./art. Sheet no./total	Titelblad Rev. letter
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Titel Curved tube			Ritad av/Drawn no. 4-17133	

Ingar i serie: R11, R12

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på annat sätt obehörigen utnyttjas.

Ingår i smst. ritn. nr 5

Tillstånd Rev. tiller	Ändr. nr Rev. no.	Läge Position	Bestämning Description	Datum Date	Sign.	Godk. Approved
	△					

1x45°

12

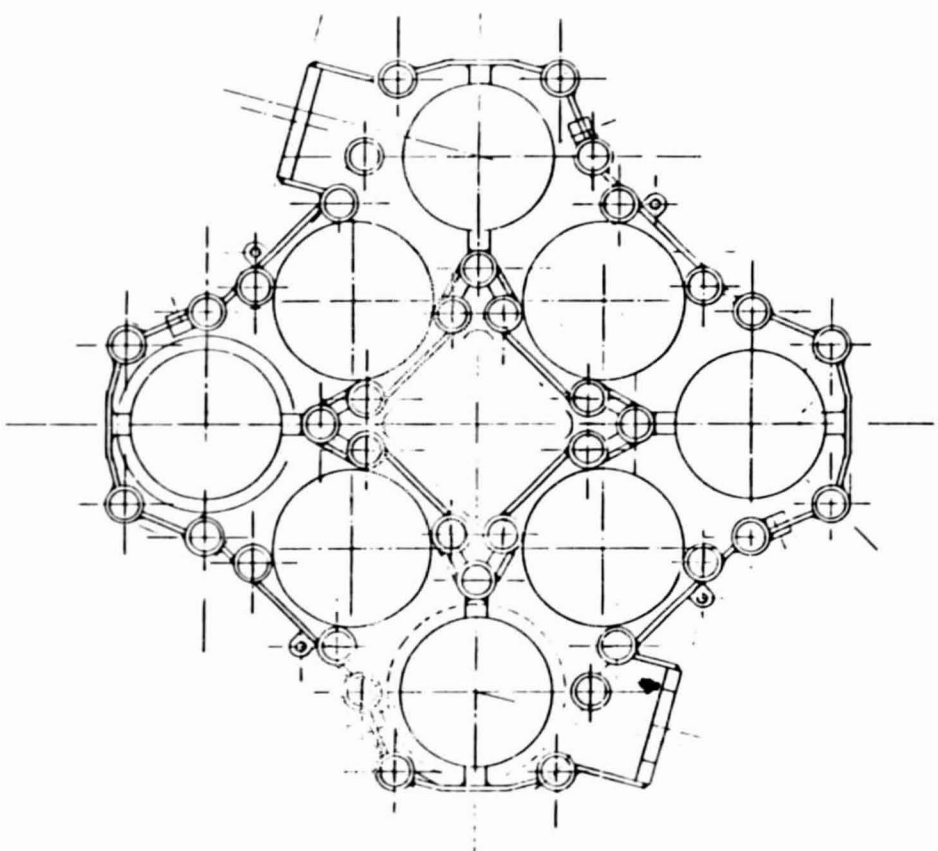
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φ68,4

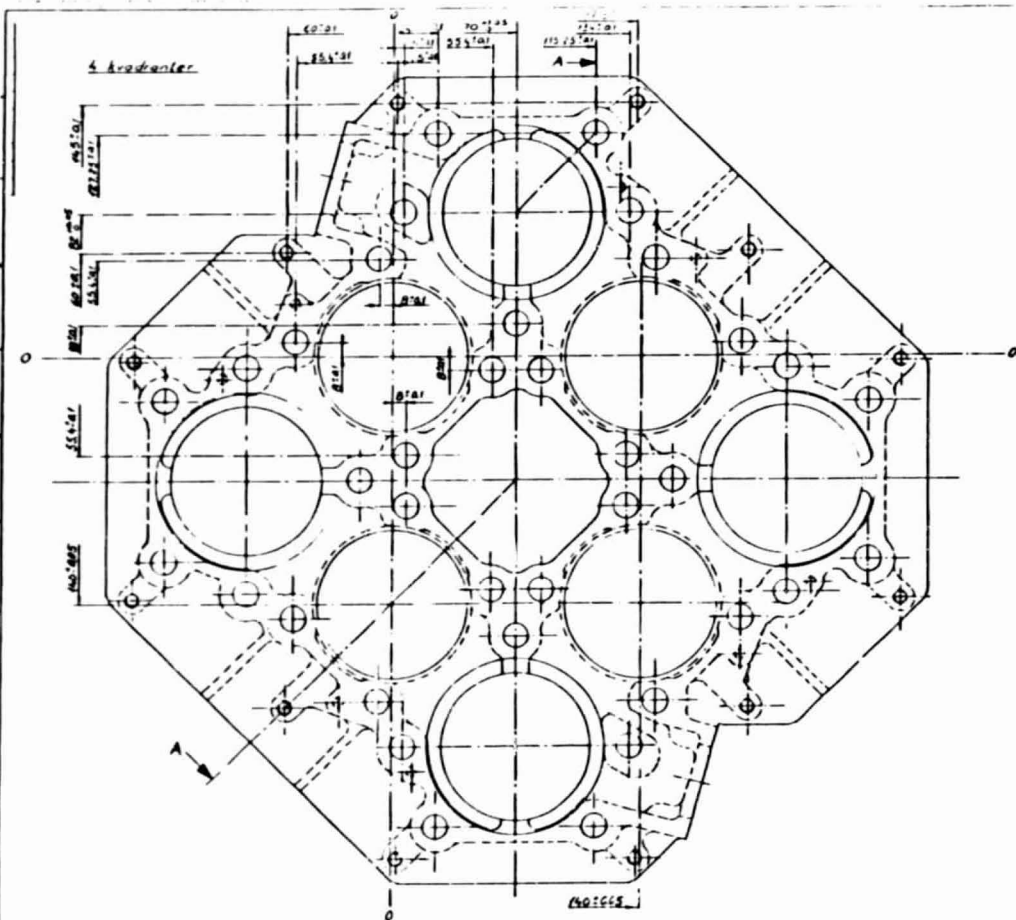
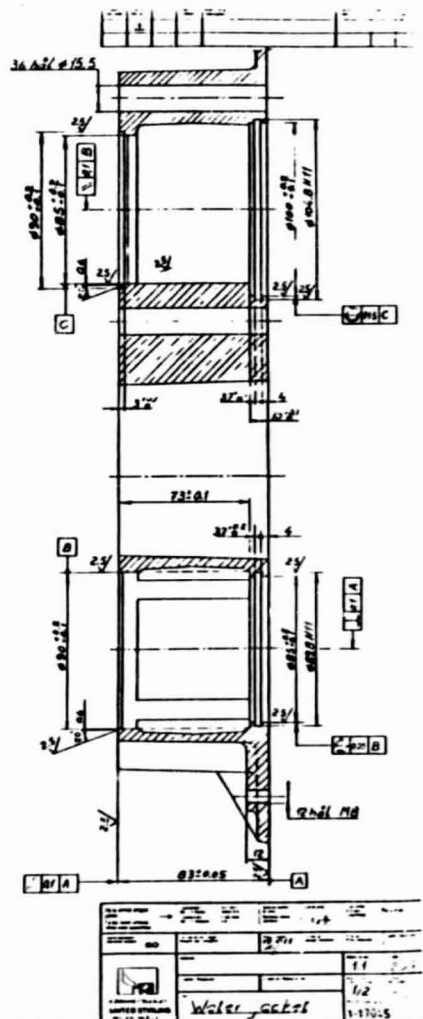
φ74

Då ej annat anges gäller: To be valid unless otherwise specified:	Toleranser SS 715 medel Tolerances SS 715 medium	Inv. nom. radier 0.5 Fillet radii 0.5	Skarpa kanter brutna Remove sharp corners	Europ. pros. 	Ytåmnhet Surface roughness	Ra μ max 6,3
Toleranssystem Tolerance system ISO	Vikt beräknad/vägd Weight calc./weighed	Risad/Drawn 79-12-21 JCS	Konstr. gr. Design checked	Prod. gr. Prod. checked	Godk./Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material SIS 1311		Skala/Scale		Grupp/Group	
	Ersätter/Replaces		Ersatt av/Replaced by		Blad nr/ant. Sheet no./total	
	Titel FIXTUR FIXTURE		Blad nr/ant. Sheet no./total 1/1		Tillstånd Rev. tiller A	
				Ritn. nr/Drawing no. 4-73 836		

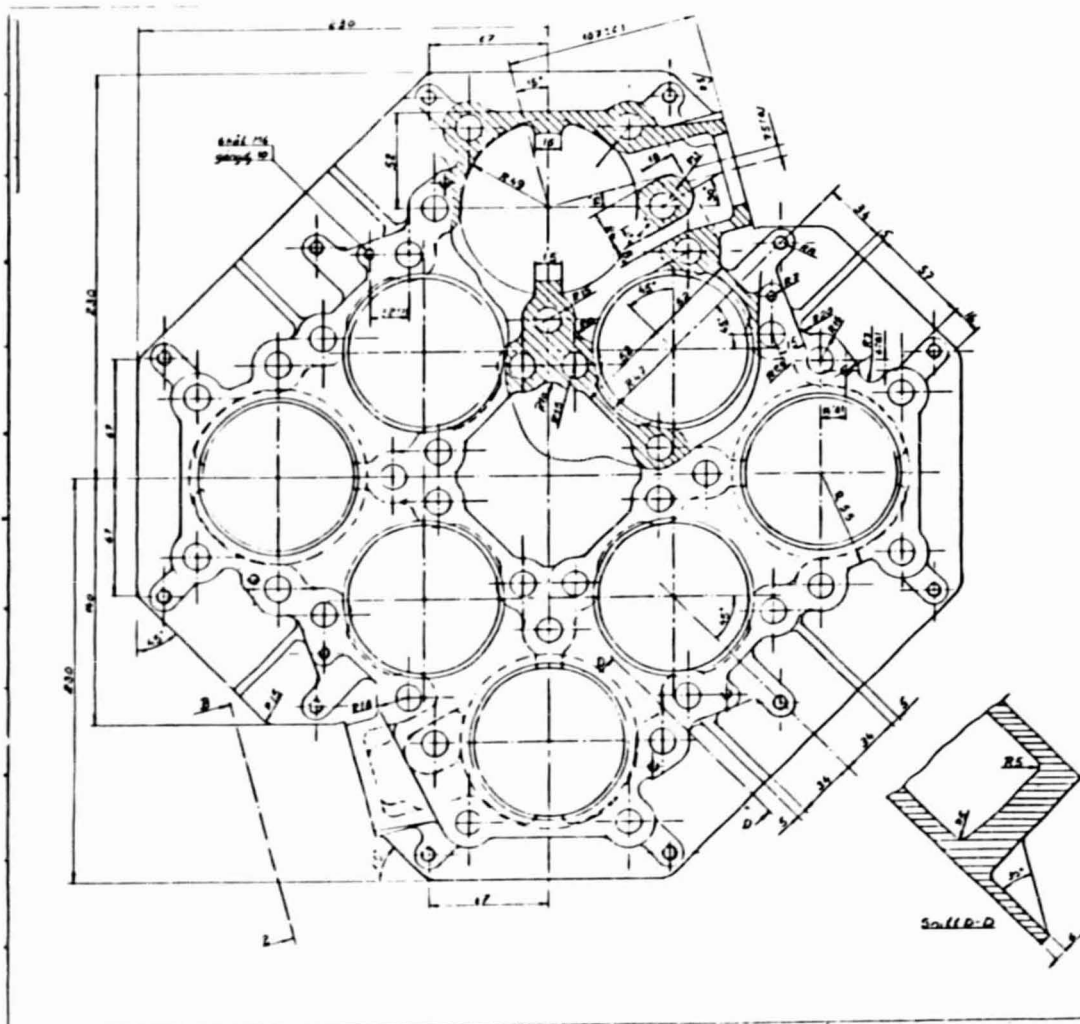
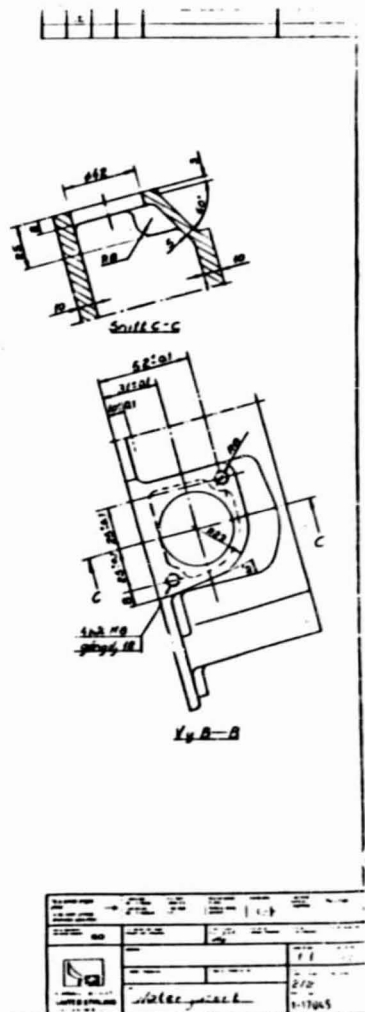
The drawing shows a side view of a chair with a high back and a seat. A section line 'A-A' is drawn through the chair, indicating a cross-section. The section view shows the internal structure of the chair, including the seat, backrest, and legs. The drawing is a technical illustration of a chair, likely for a patent or a design document.

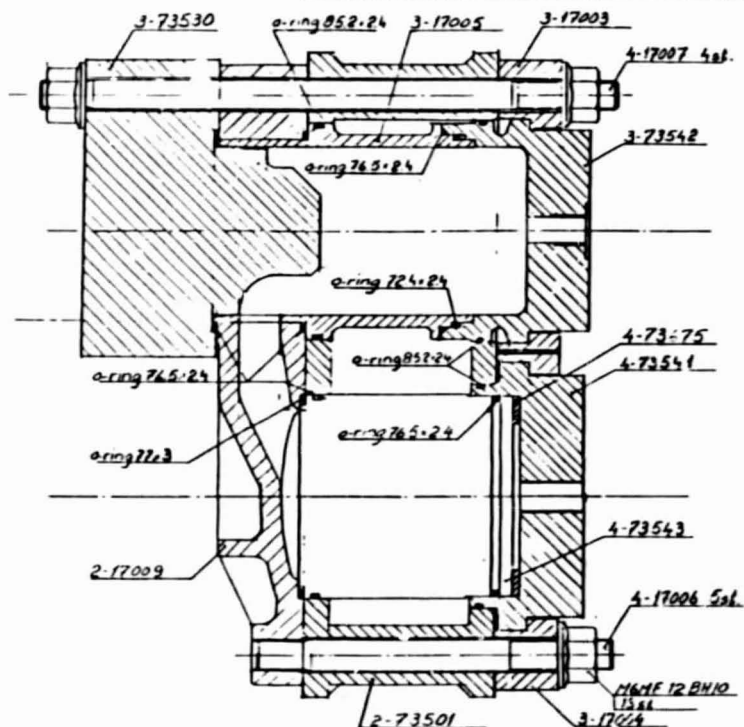
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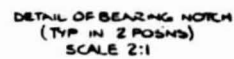
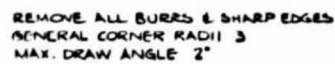
DRAWINGS - UPDATE

1-61101	Connecting rod. Power piston
1-61108	Crankcase/Bedplate. Machining drawing, sheet 1
1-61108	" " " " " 2
1-61112	Crankshaft. No. 1 and 2 Cylinders
1-61113	" " 3 and 4 "
1-61116	Crankcase, sheet 1
1-61116	" " 2
1-61116	" " 3
1-61116	" " 4
1-61116	" " 5
1-61116	" " 6
1-61116	" " 7
1-61117	Bedplate, sheet 1
1-61117	" " 2
1-61117	" " 3
1-61117	" " 4
1-61119	Sump, sheet 1
1-61119	" " 2
1-61120	Gasket-bedplate
1-61121	Intercasing, sheet 1
1-61121	" " 2
1-61121	" " 3
1-61123	Water pump body
1-61133	Arr. drawing. ASE MOD I. Front view, sheet 1
1-61133	" " " " " " " 2
1-61133	" " " " " " " 3
1-61133	" " " " " " " 4
1-61144	Main drive shaft
1-61149	Oil filter housing
1-61157	Retaining plate. Bolvers
1-61159	Flywheel plate
1-61160	Lubrication system
1-61202	Crankshaft. Driveshaft. ASE MOD I, sheet 1
1-61202	" " " " " " 2

1-61204	Lubrication system, sheet 1
1-61204	" " " 2
1-61205	Intercasing/Idler assembly
1-61206	Crankcase/Bedplate assembly. ASE MOD I, sheet 1
1-61206	" " " " " " 2
1-61216	Longitudinal section with clutch. ASE MOD I
1-61219	Clutch housing, sheet 1
1-61219	" " " 2
1-61219	" " " 3
1-61222	Flywheel
1-61232	Arrangement for dynamically balancing crankshaft. ASE MOD I
1-61236	R.H. Bracket to bedplate
1-61237	L.H. " " "
1-61238	R.H. Bracket to clutch housing
1-61239	L.H. " " " "
1-61240	Crankshaft. No. 5. 1 and 2 cylinders
1-61242	Safety clutch assembly
2-61104	Connecting rod assembly
2-61114	Connecting rod - Hydrogen pump
2-61122	Intercasing gasket
2-61131	Gasket - Intercasing/water pump
2-61142	Hub - Idler
2-61145	Rear bearing house
2-61147	Rear bearing housing assembly
2-61153	Liner - Power piston
2-61154	Reciprocating mass - Power piston
2-61155	Liner - Hydrogen pump
2-61156	Reciprocating mass - Hydrogen pump
2-61165	Connecting rod assy - Hydrogen pump
2-61166	Straight spur gear - Driveshaft
2-61167	Straight spur gear - Crankshaft
2-61168	Helical gear - Driveshaft
2-61169	Helical gear - Crankshaft
2-61170	Helical idler gear 77 - teeth - (3100 rev/min)
2-61171	Helical idler gear 83 - teeth - (3600 rev/min)
2-61172	Helical water pump gear 153 - teeth - (3100 rev/min)

2-61173	Helical water pump gear 131 - teeth - (3600 rev/min)
2-61174	Assembly. Idler gear/bushes
2-61182	Water pump assy
2-61194	Parts list drg water pump assy
2-61196	Water pump drive hub
2-61197	Assembly - Idler gear/bushes
2-61200	Parts list drg hydrogen pump assy. Connecting rod parts
2-61201	Parts list drg power piston assy. Connecting rod parts
2-61211	Oil strainer assy
2-61220	Coupling shaft
2-61224	Link weight - assy
3-61102	Connecting rod bolt
3-61103	Connecting rod - nut
3-61106	Slipper piston pin
3-61107	Bush small end - piston rod
3-61109	Main bearing
3-61110	Thrust washer
3-61118	Con rod bearing - power piston
3-61125	Shaft - water pump
3-61126	Hub - water pump impeller
3-61127	Impeller/hub assembly
3-61132	Gasket - Inlet pipe
3-61134	Washer - Main bearing stud
3-61136	Dowel - Crankcase to bedplate
3-61137	Dowel - Intercasing
3-61139	Big end bearing - Hydrogen pump
3-61140	Bush - Idler hub
3-61141	Outer bush - Rear bearing housing
3-61143	Bush - Small end
3-61146	Inner bush - Rear bearing housing
3-61150	Gasket - Oilfilter housing
3-61151	Adaptor - Oilfilter housing
3-61152	Drive peg - Oil pump
3-61161	Front end balance weight
3-61164	Stud - Crankcase

3-61178	Stud - Hydrogen pump con rod
3-61179	Piston pin - Hydrogen pump
3-61180	Gear oilspray jet
3-61181	Face ring - Water pump impeller
3-61184	Suction pipe
3-61185	Strainer - Oil suction pipe
3-61193	Parts list drg - Rear bearing housing assy
3-61199	Nut - Main bearing stud
3-61212	Pipe retaining plate
3-61213	Housing - Strainer
3-61221	Bearing
3-61223	Collar - O ring
3-61225	Dynamic balance weight
	Front - Nos 1 & 2 Cyl
3-61226	Dynamic balance weight
	Rear - Nos 1 & 2 Cyl
3-61227	Dynamic balance weight
	Front - Nos 3 & 4 Cyl
3-61228	Dynamic balance weight
	Rear - Nos 3 & 4 Cyl
3-61229	Hydrogen pump weight
3-61233	Flywheel balance weight
3-61234	Gear balance weight
3-61235	Gear balance weight
3-61241	Parts list drg
	Oil strainer assembly



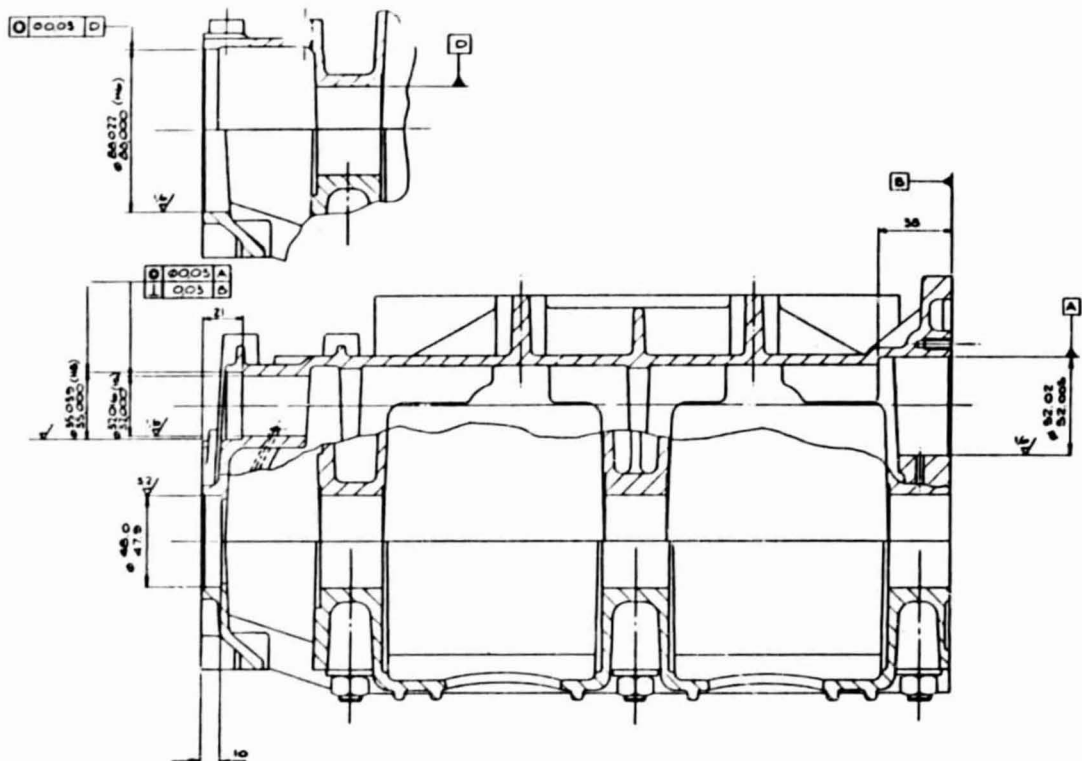
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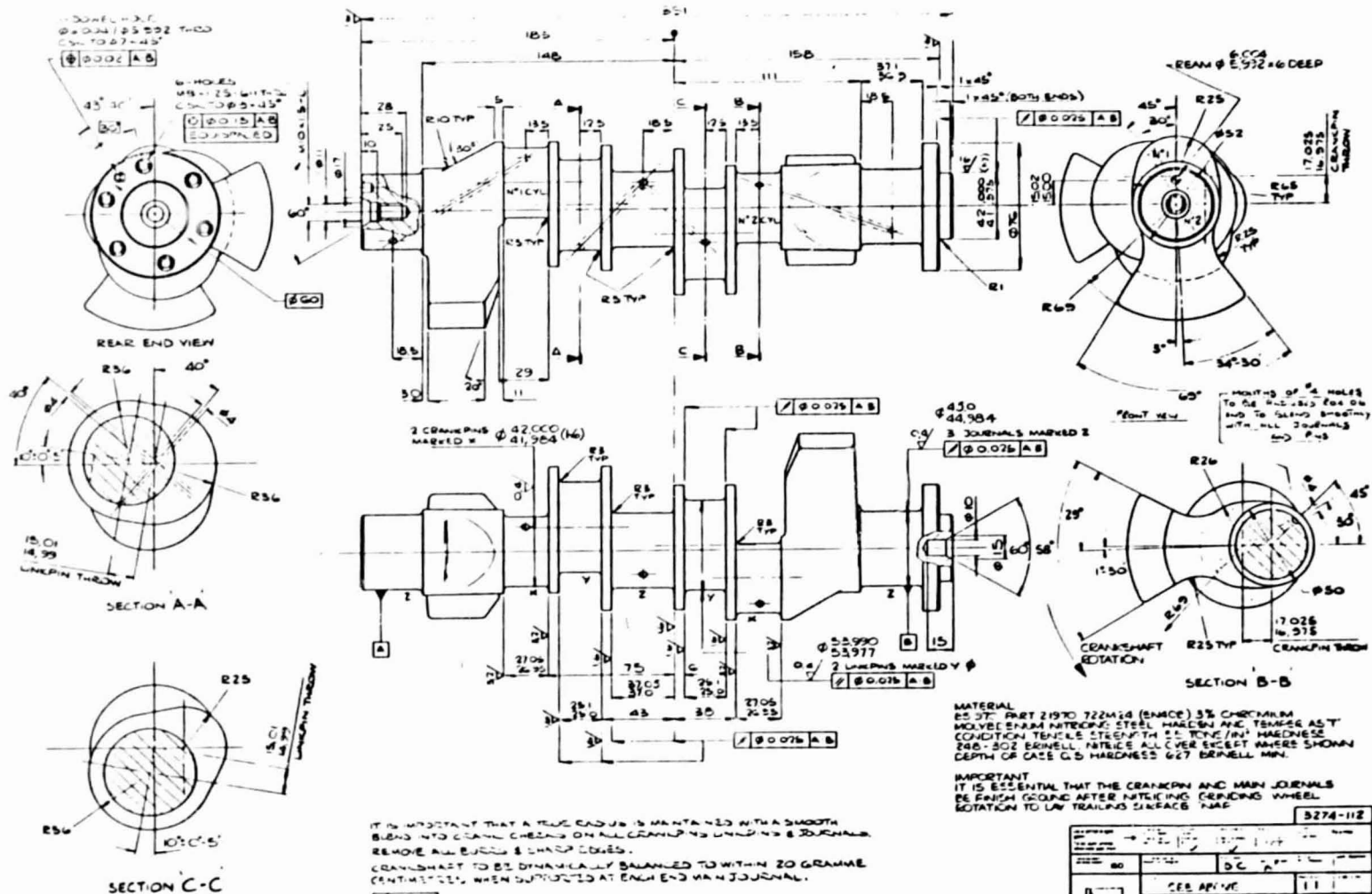
CONNECTING ROD-POWER PISTON

1-6-101



3274 - 108

[illegible]



IT IS IMPORTANT THAT A TRUE CAD JOURNAL IS MAINTAINED WITH A SMOOTH BLEND INTO CABLE CHAINS ON ALL CHAINS AND UNDS & JOURNALS. REMOVE ALL BURRS & SHARP EDGES.

CABLESHAFT TO BE DYNAMICALLY BALANCED TO WITHIN 20 GRAMME CENTIMETERS, WHEN SUPPORTED AT EACH END WITH JOURNAL.

0	0037
//	0037

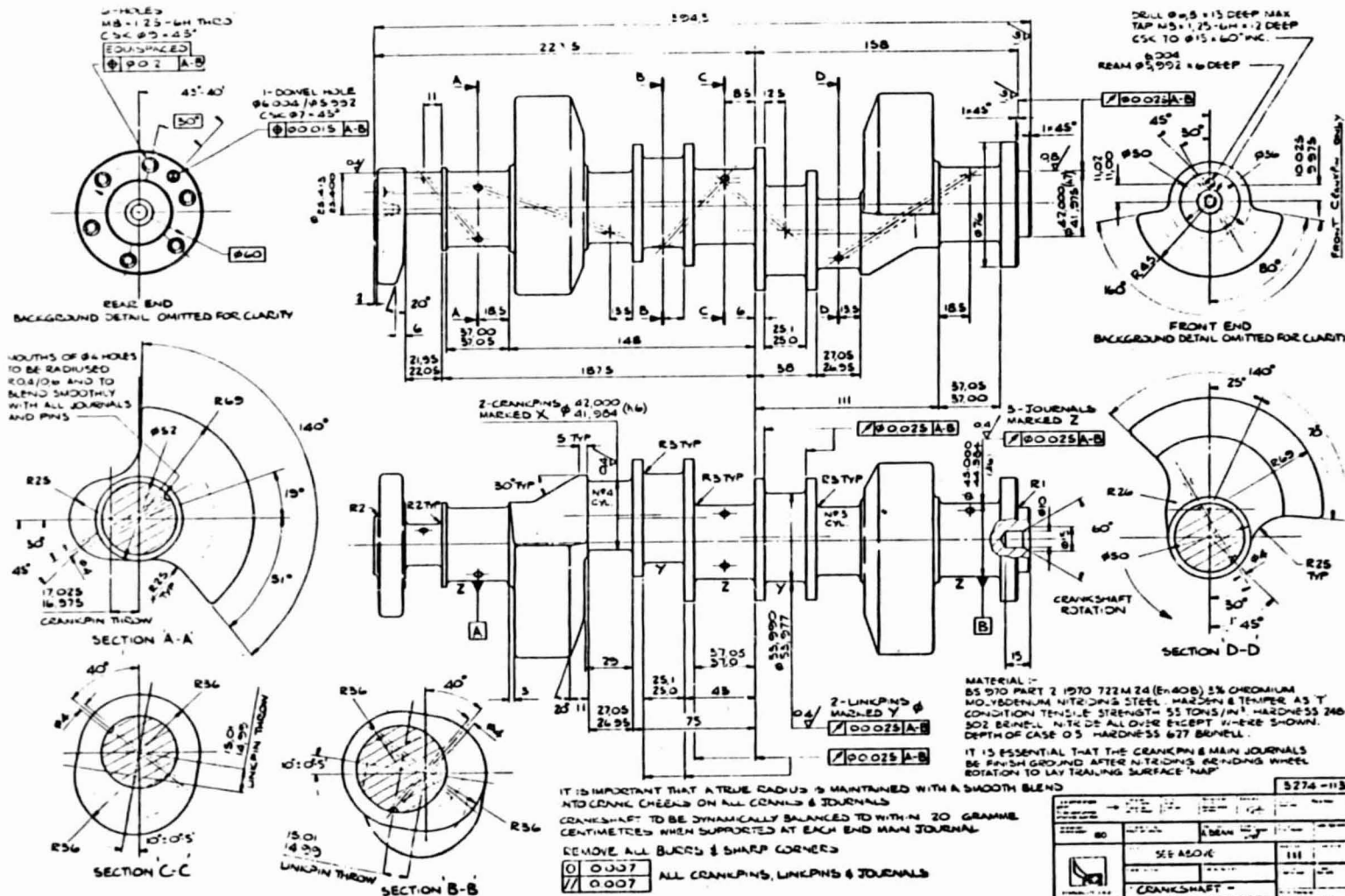
ALL CONCEPTS, LINKING & JOURNALS.
MACHINE ALL OVER

MATERIAL
E53T PART 21970 722M24 (ENHCE) 3% CHROMIUM
MOLYBDENUM NITROGEN STEEL HARDEN AND TEMPER AS T
CONDITION TENSILE STRENGTH 86 TON/IN² HARDNESS
280-302 BRINELL NITRICE ALL OVER EXCEPT WHERE SHOWN
DEPTH OF CASE C.S. HARDNESS 627 BRINELL MIN.

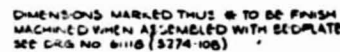
IMPORTANT
IT IS ESSENTIAL THAT THE CRANKPIN AND MAIN JOURNALS
BE FINISH GRIND AFTER NITRICKING WHEEL
ROTATION TO LOW TRAILING SURFACE WAF

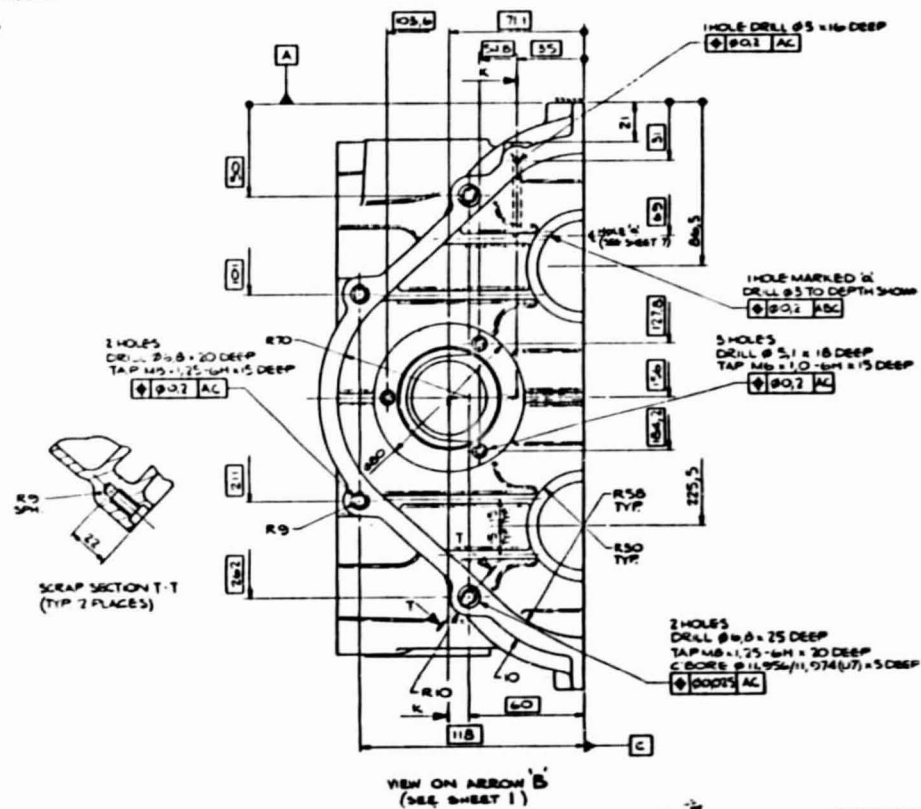
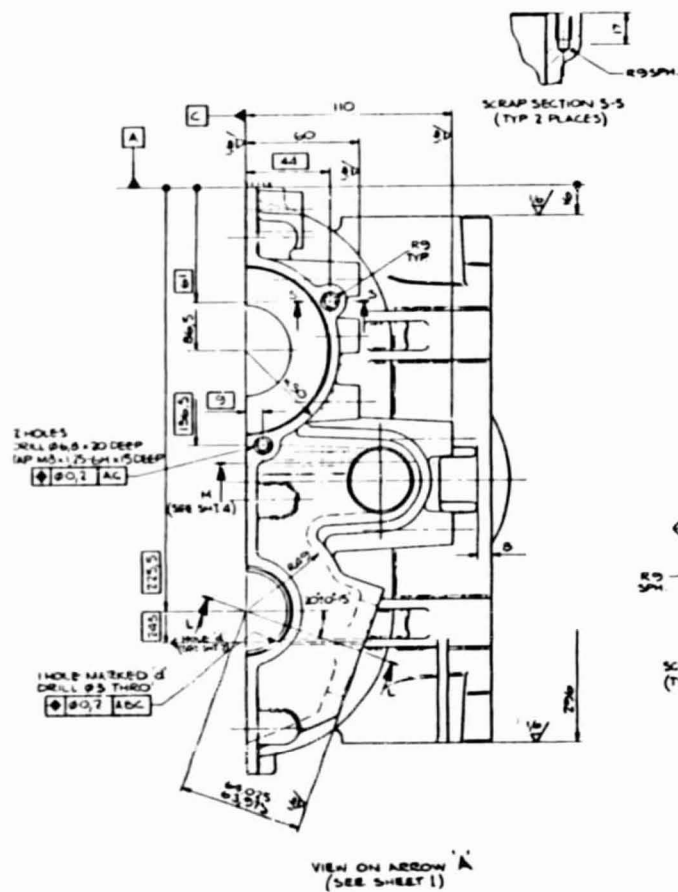
TRAILWAYS SINKFACE MAP 5274-112	
1. DATE OF SURVEY 2. NAME OF SURVEYOR 3. NAME OF COMPANY 4. NAME OF CLIENT	5. NAME OF PROJECT 6. NAME OF SITE 7. NAME OF AREA 8. NAME OF LOCATION
9. NAME OF SURVEYOR 10. NAME OF COMPANY 11. NAME OF CLIENT	12. NAME OF PROJECT 13. NAME OF SITE 14. NAME OF AREA 15. NAME OF LOCATION
16. NAME OF SURVEYOR 17. NAME OF COMPANY 18. NAME OF CLIENT	19. NAME OF PROJECT 20. NAME OF SITE 21. NAME OF AREA 22. NAME OF LOCATION
23. NAME OF SURVEYOR 24. NAME OF COMPANY 25. NAME OF CLIENT	26. NAME OF PROJECT 27. NAME OF SITE 28. NAME OF AREA 29. NAME OF LOCATION
30. NAME OF SURVEYOR 31. NAME OF COMPANY 32. NAME OF CLIENT	33. NAME OF PROJECT 34. NAME OF SITE 35. NAME OF AREA 36. NAME OF LOCATION

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SHEET 2 OF 7 SHEETS

3274-14

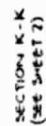
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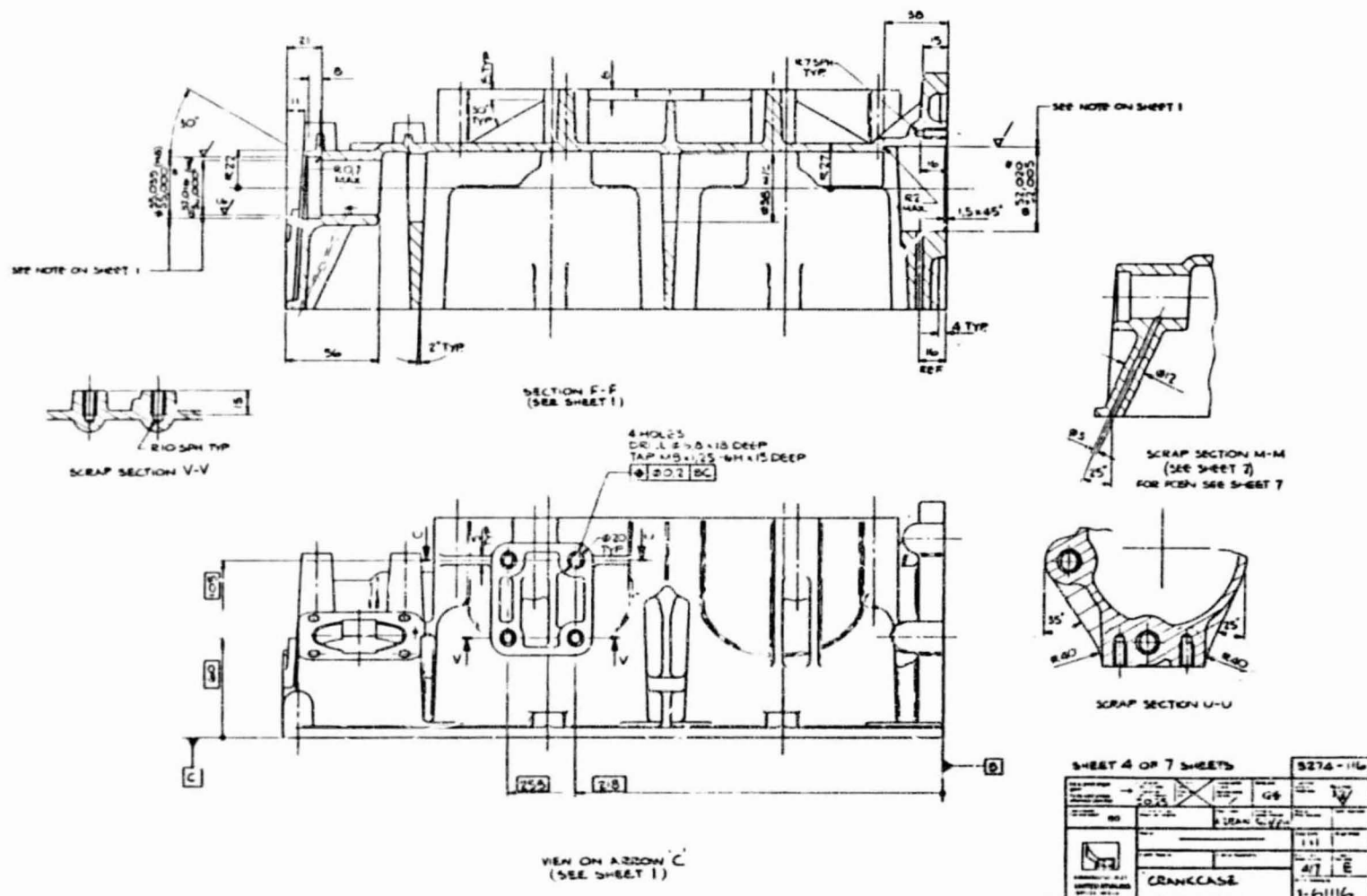
CRANICASE

2/7

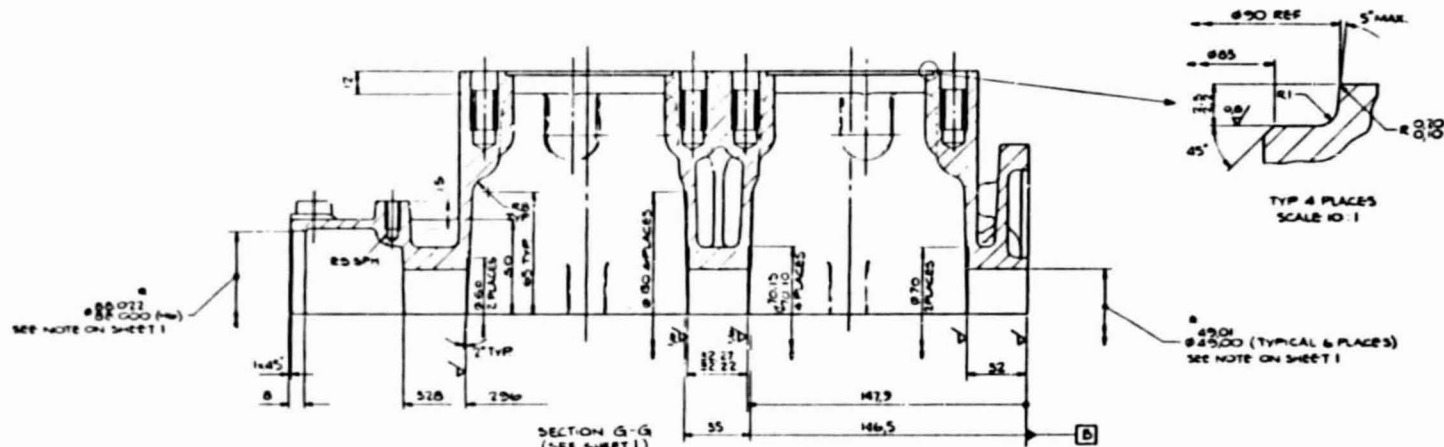
E. G. 1116

111-190

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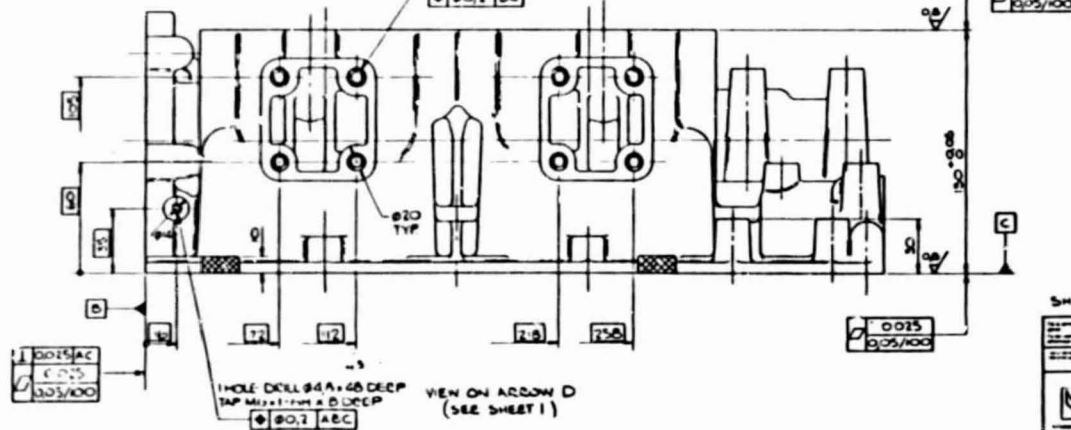


TYP 4 PLACES
SCALE 10:1

49.01
- 0.49,00 (TYPICAL 6 PLACES)
SEE NOTE ON SHEET 1

SECTION G-G
(SEE SHEET I)

8 HOLES
DRILL Ø10.5 x 15 DEEP
TAP M8 x 1.25 - 4 x 15 DEEP



VIEW ON ARROW D
(SEE SHEET 1)

	0.025	C
	0.075	
	0.05/100	

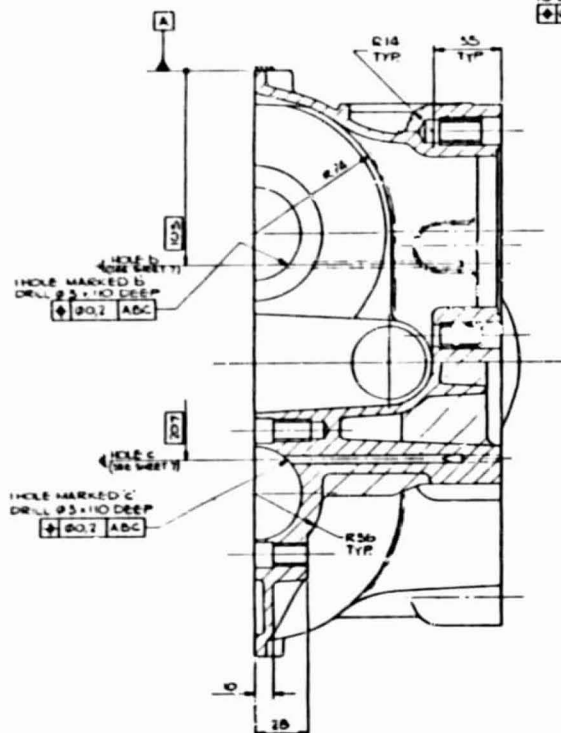
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9.05/100

1	0025	AC
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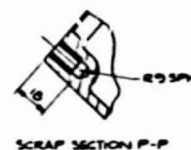
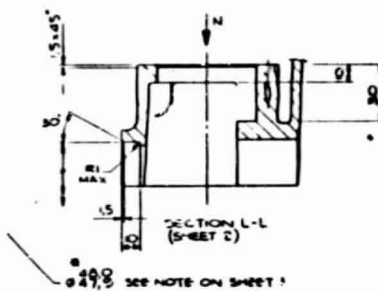
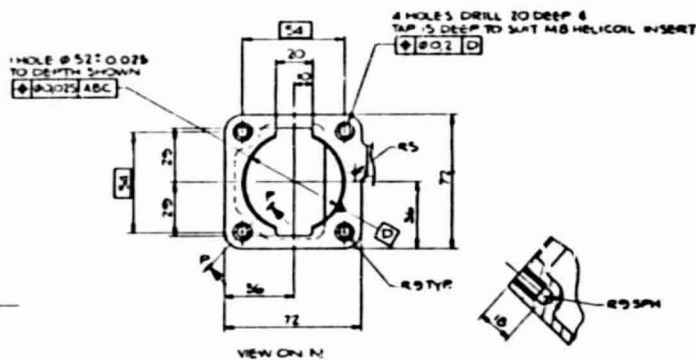
SHEET 5 OF 7 SHEETS

SHEET 5 OF 7 SHEETS						5274-116	
		Gt		V			
NO		LEAD		5/7			
		CRANECADE		5/7		E	
				1. 61116			

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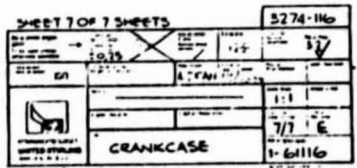
SECTION E-E
(SEE SHEET 1)



1	1	SEE SHEET 1
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SHEET 6 OF 7 SHEETS		3274-110
DESIGNED BY	W. J. H. H.	W. J. H. H.
CHECKED BY	W. J. H. H.	W. J. H. H.
APPROVED BY	W. J. H. H.	W. J. H. H.
DATE	11/1/66	11/1/66
PROJECT	CRANKCASE	1-61116



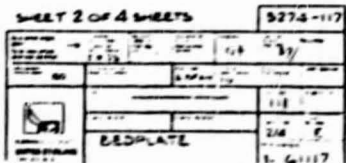
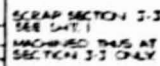
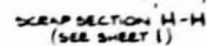
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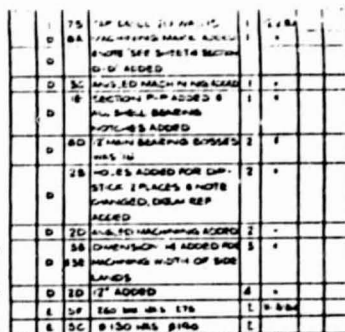


GENERAL DRAFT ANGLE 3° MAX
GENERAL FILLET RAD 6
NOMINAL WALL THICKNESS 5
GENERAL CORNER RAD 3
AREAS MARKED THIS WAY TO BE
USED FOR LOCATION OF CASTING
FOR MACHINING
ON ALL TAPPED HOLES, C/BK 90°
TO REMOVE FIRST THREAD

ALTERNATIVE MATL SPEC.
K.S. 239 G-ALSi 10M₂WA

[illegible]

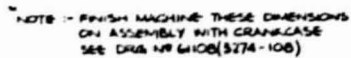




SHEET 3 OF 4 SHEETS

3274-117

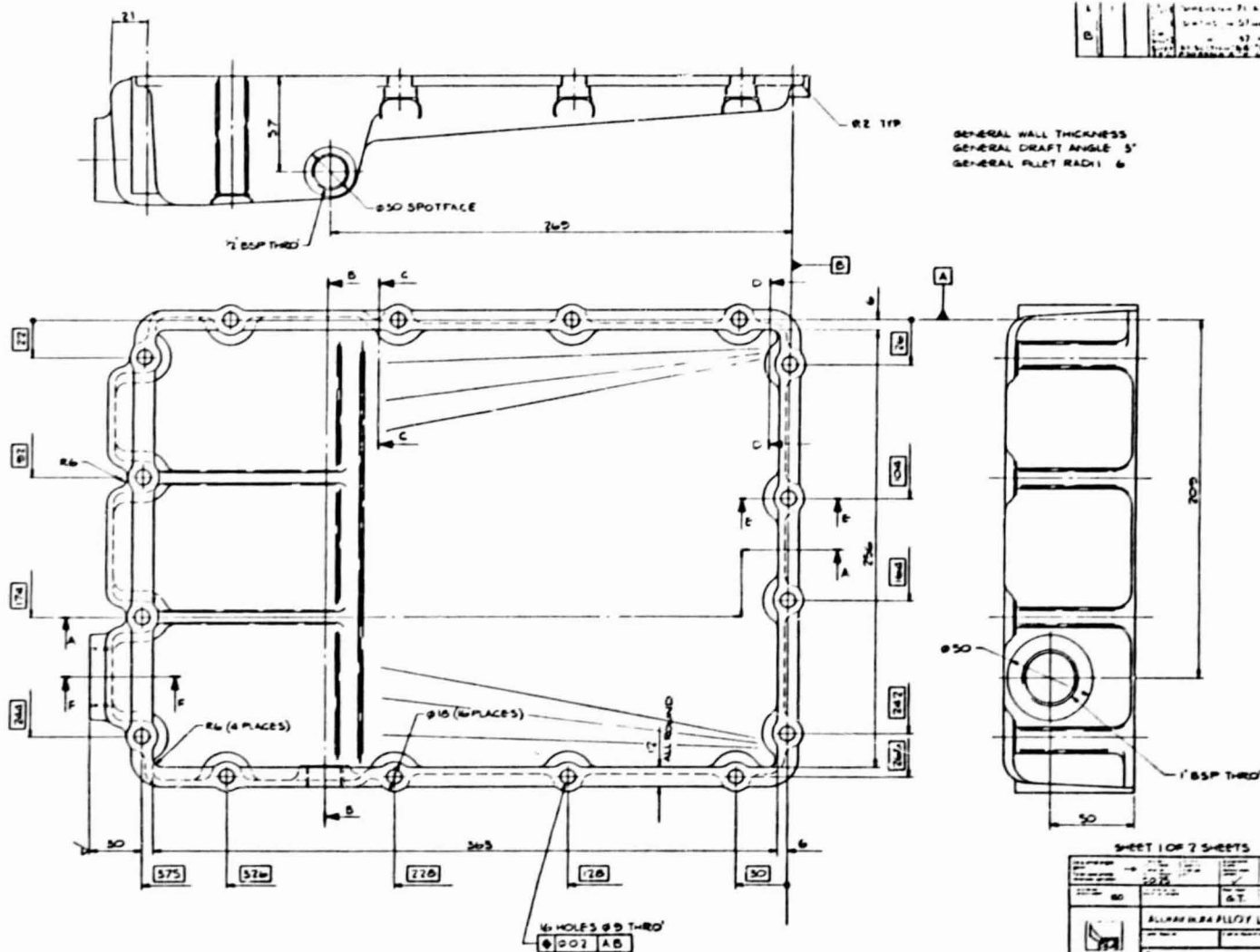
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SHEET 4 OF 4 SHEETS B274-117

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DATE OF ADMISSION	1-11-11	DATE OF DISCHARGE	1-11-11	DATE OF DEATH	1-11-11
DATE OF BIRTH	1-11-11	SEX	M	RACE	W
DATE OF ADMISSION	1-11-11	DATE OF DISCHARGE	1-11-11	DATE OF DEATH	1-11-11
BEDPLATE					
PHYSICIAN					
HISTORY					

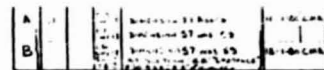
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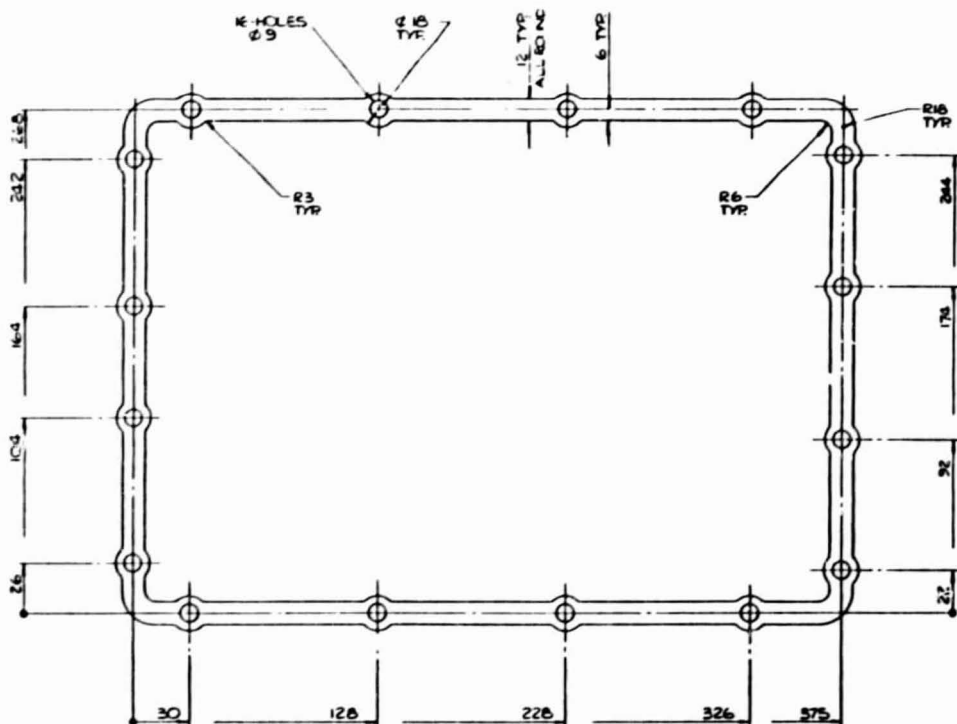
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APPROVED	1-6-1120
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SHEET 2 OF 5 SHEETS 5274-121

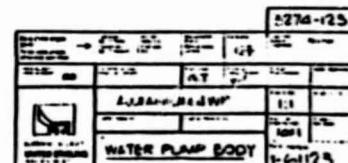
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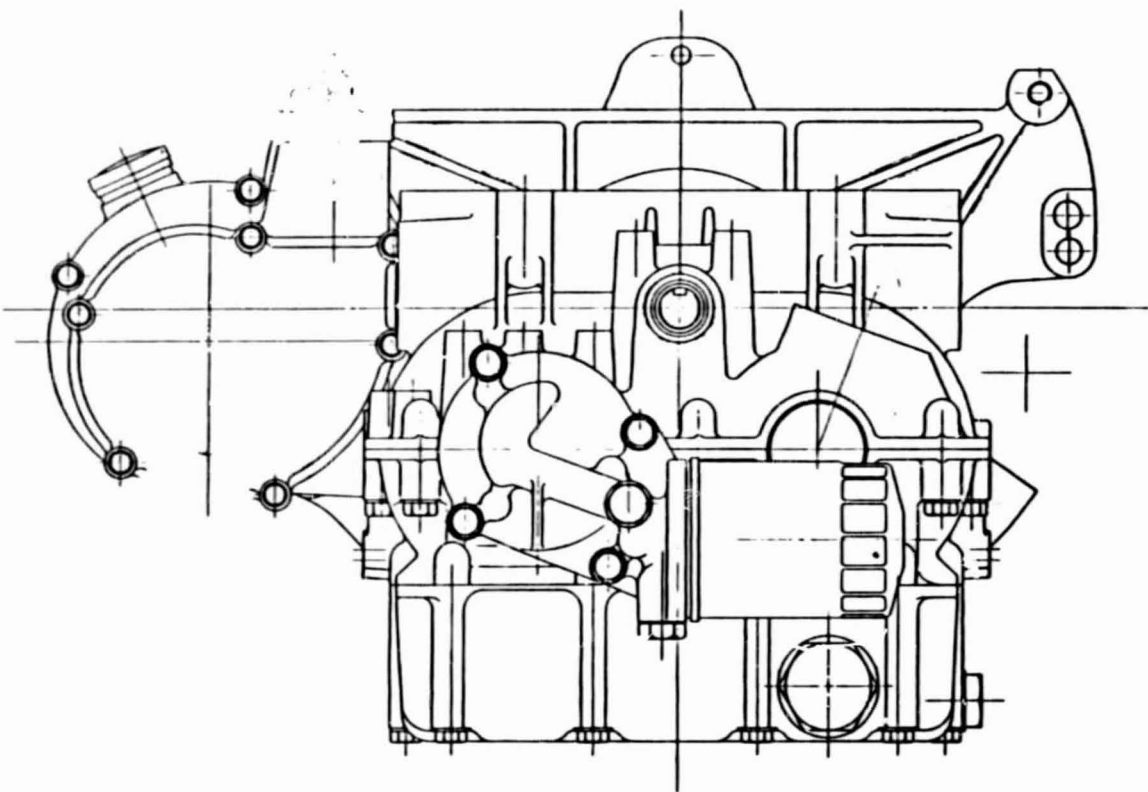
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INTERCASING 1-6171



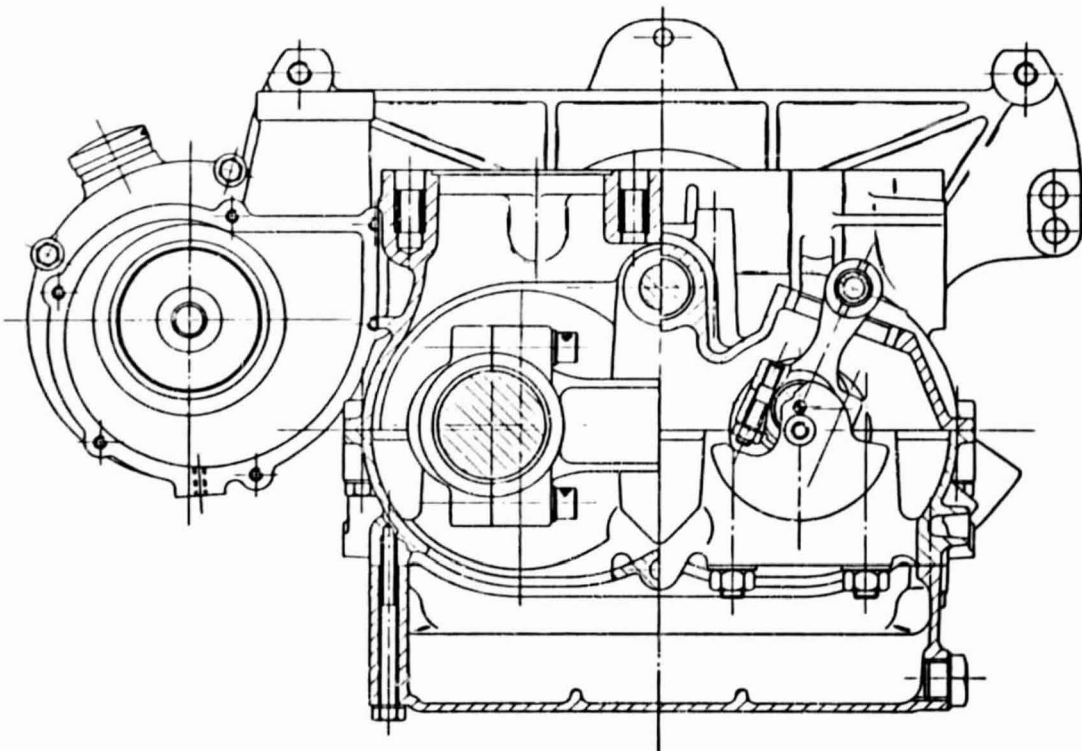


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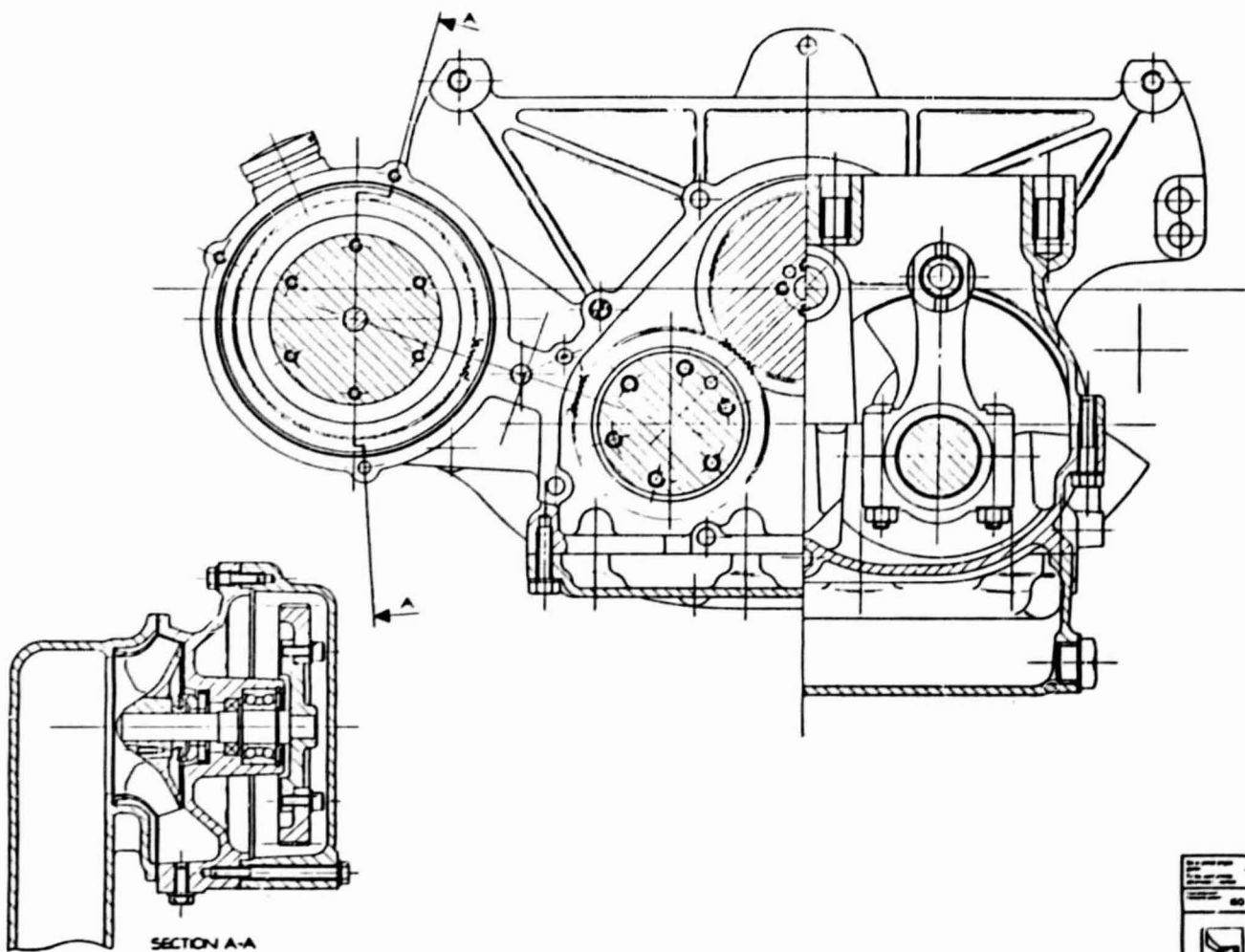
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DATE	1-6-55
BY	GAD
CHECKED	
APPROVED	
	
ALIGNMENT DRAWING ASE MOD 1-FRONT VIEW	
1-64155	

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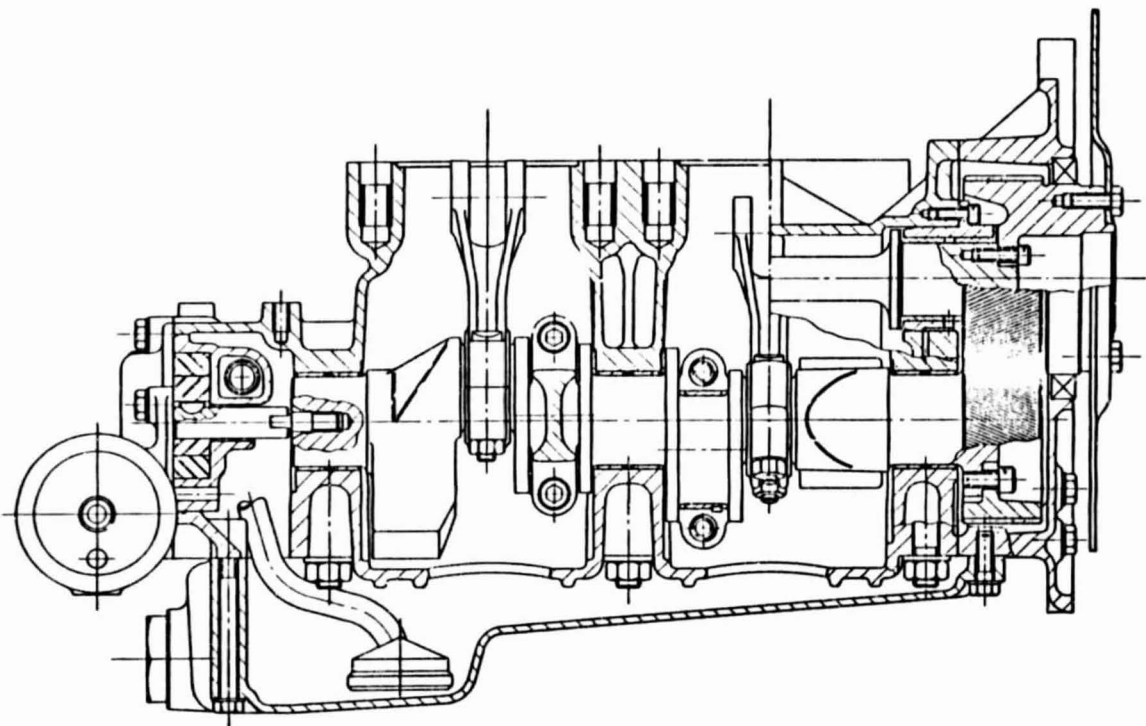
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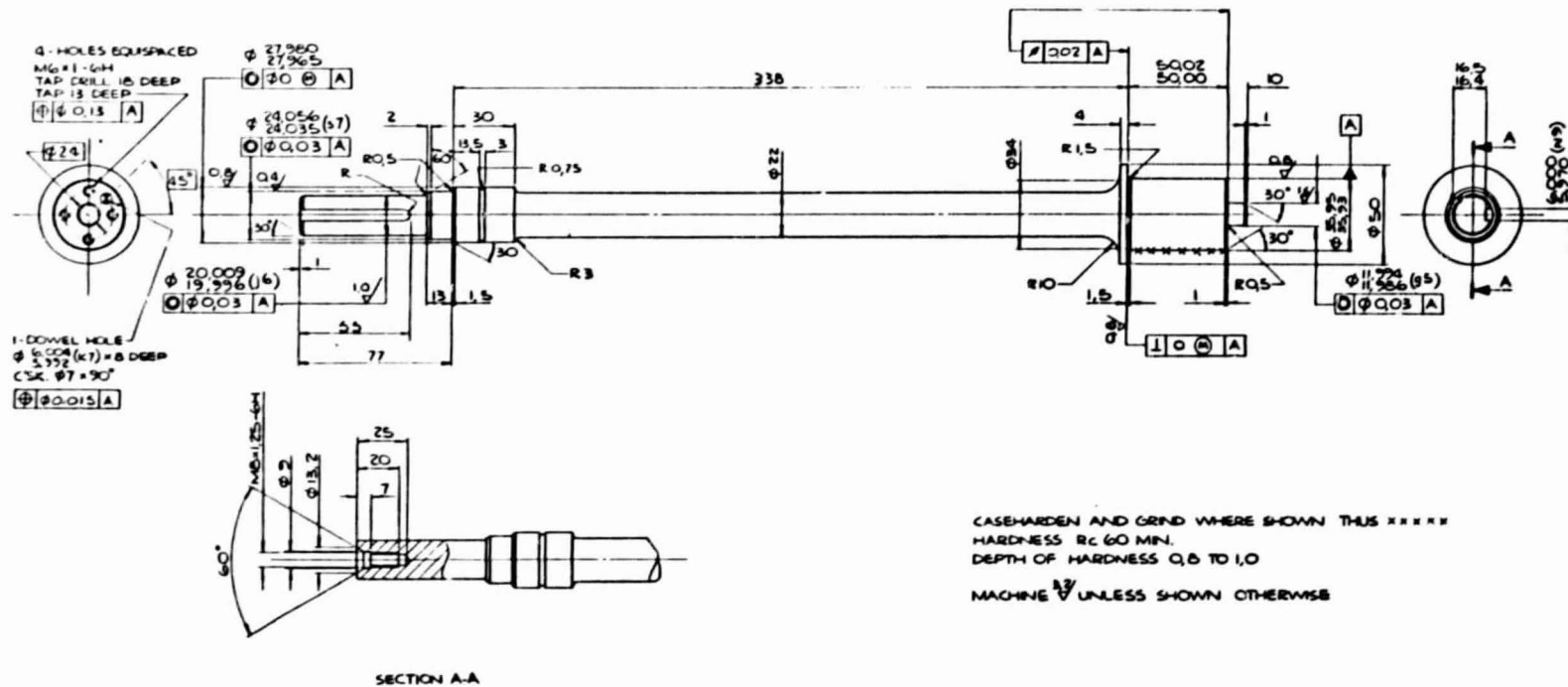


3274-153	
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ARRANGEMENT DRAWING	
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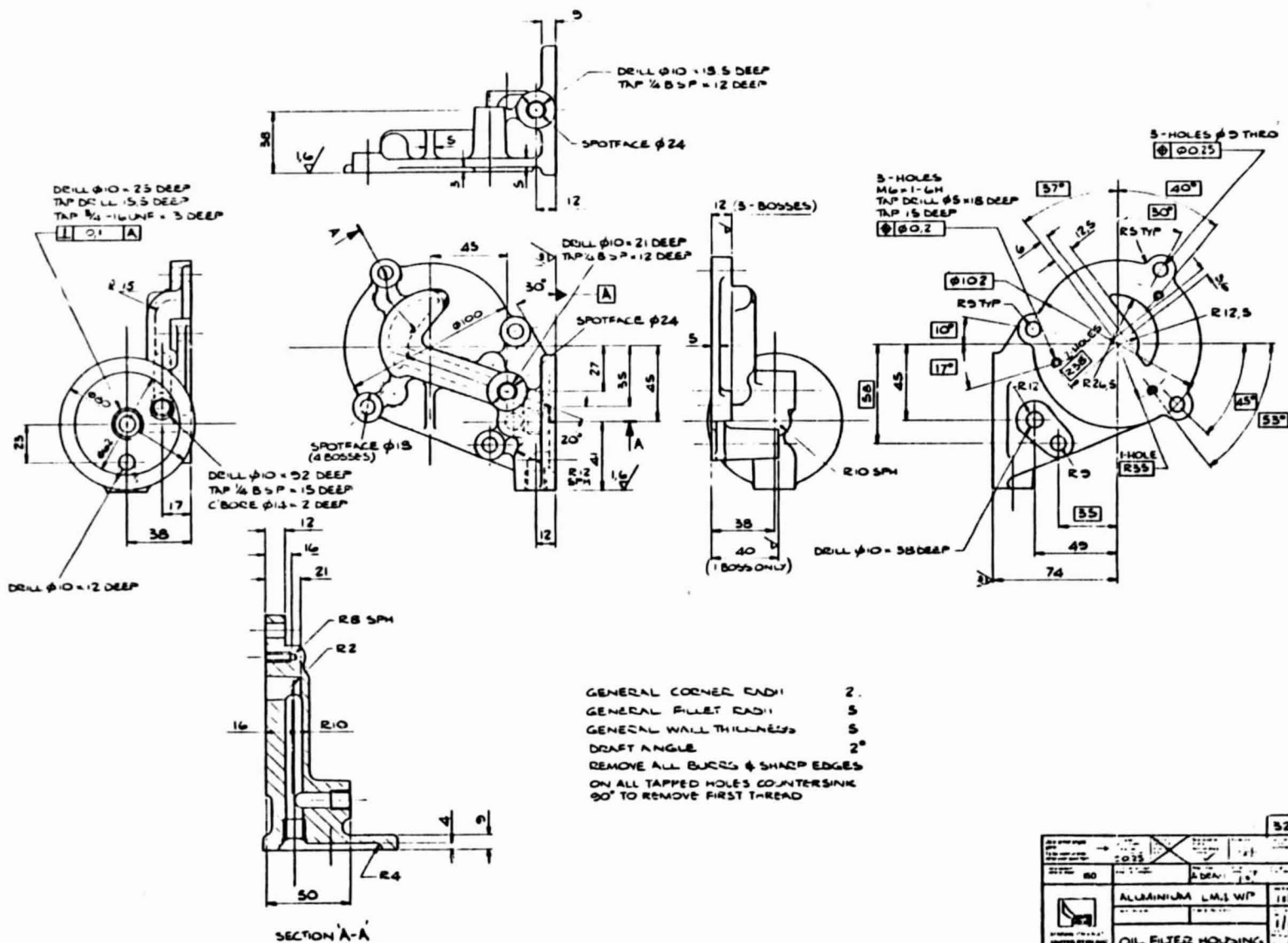
5274-135	
DESIGNER	DATE
50	10/1/55
APP'D	DATE
GAD	10/1/55
REV	DATE
1	10/1/55
ARRANGEMENT DRAWING	
PSS MOD 1 LONGITUDINAL	
1-61135	



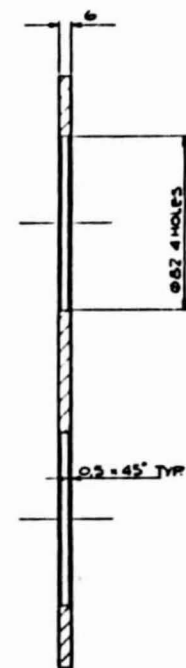
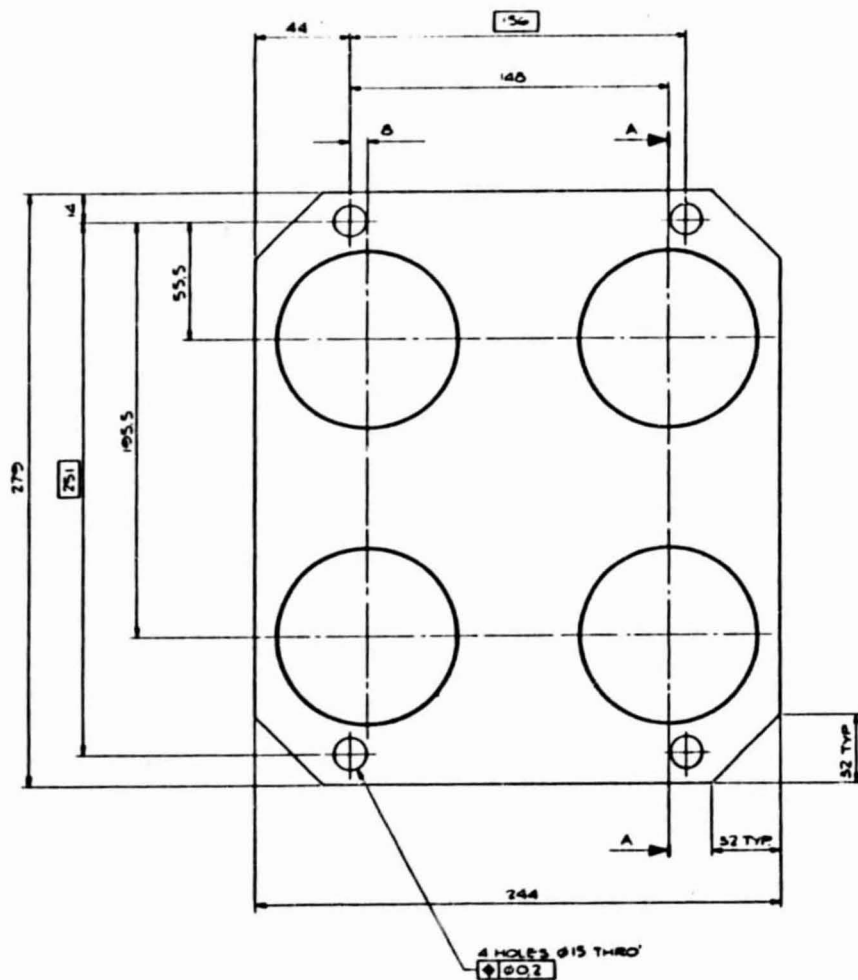
CASEHARDEN AND GRIND WHERE SHOWN THIS *****
HARDNESS RC 60 MIN.
DEPTH OF HARDNESS 0.05 TO 1.0
MACHINE V UNLESS SHOWN OTHERWISE

ORIGINAL PAGE IS
OF POOR QUALITY

5274-164			
Part Name	Part Number	Part Description	Part Material
MAIN DRIVE SHAFT	5274-164	MAIN DRIVE SHAFT	5274-164
Part Name	Part Number	Part Description	Part Material
MAIN DRIVE SHAFT	5274-164	MAIN DRIVE SHAFT	5274-164



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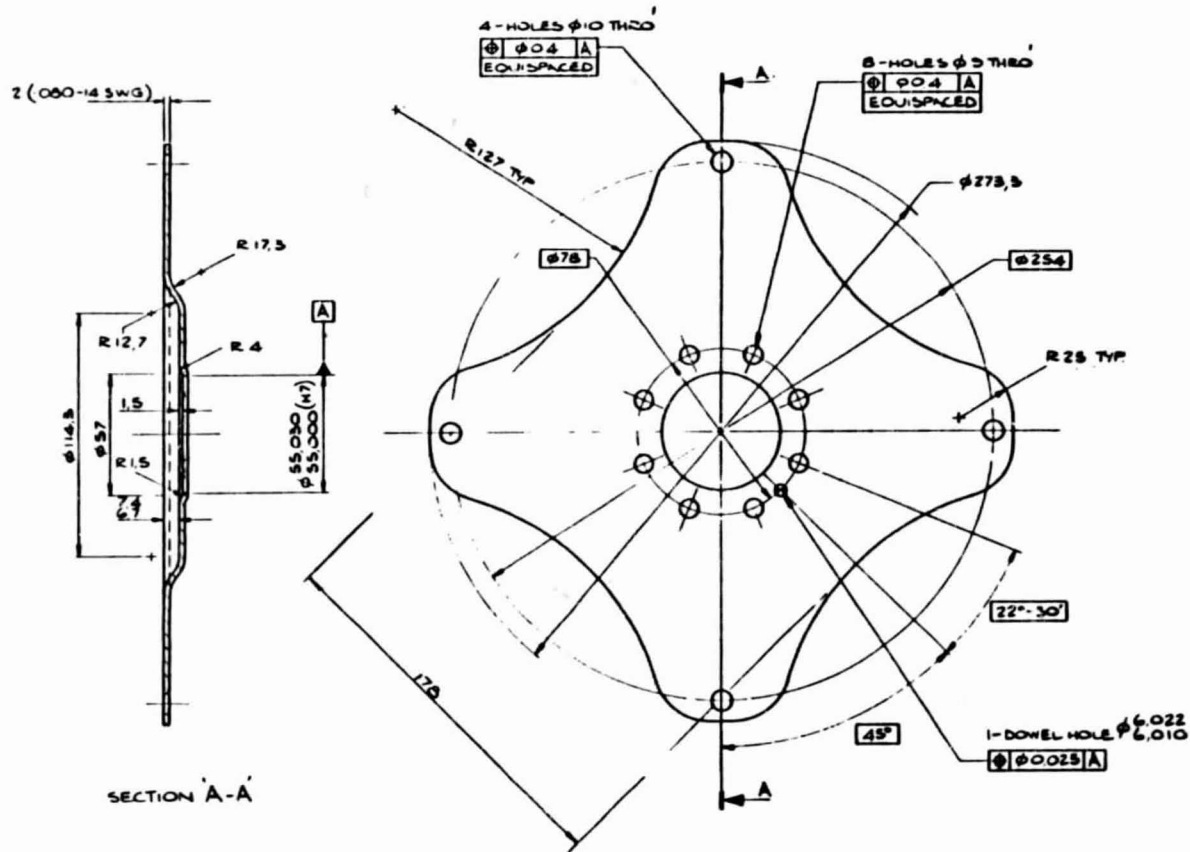


SECTION A-A

REMOVE ALL BURRS & SHARP EDGES

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STEEL 02 970		3274-157	
Q.T.	10	10	10
UNITED STEELING		RETAINING PLATE - LINERS	
101157		A	



REMOVE ALL BURRS & SHARP EDGES

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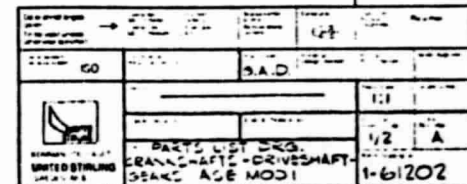
3274-153	
REV	REV
50	1
STEEL W/ 1/2" DIA 45 DPT	111
FLYWHEEL PLATE	1- 61159



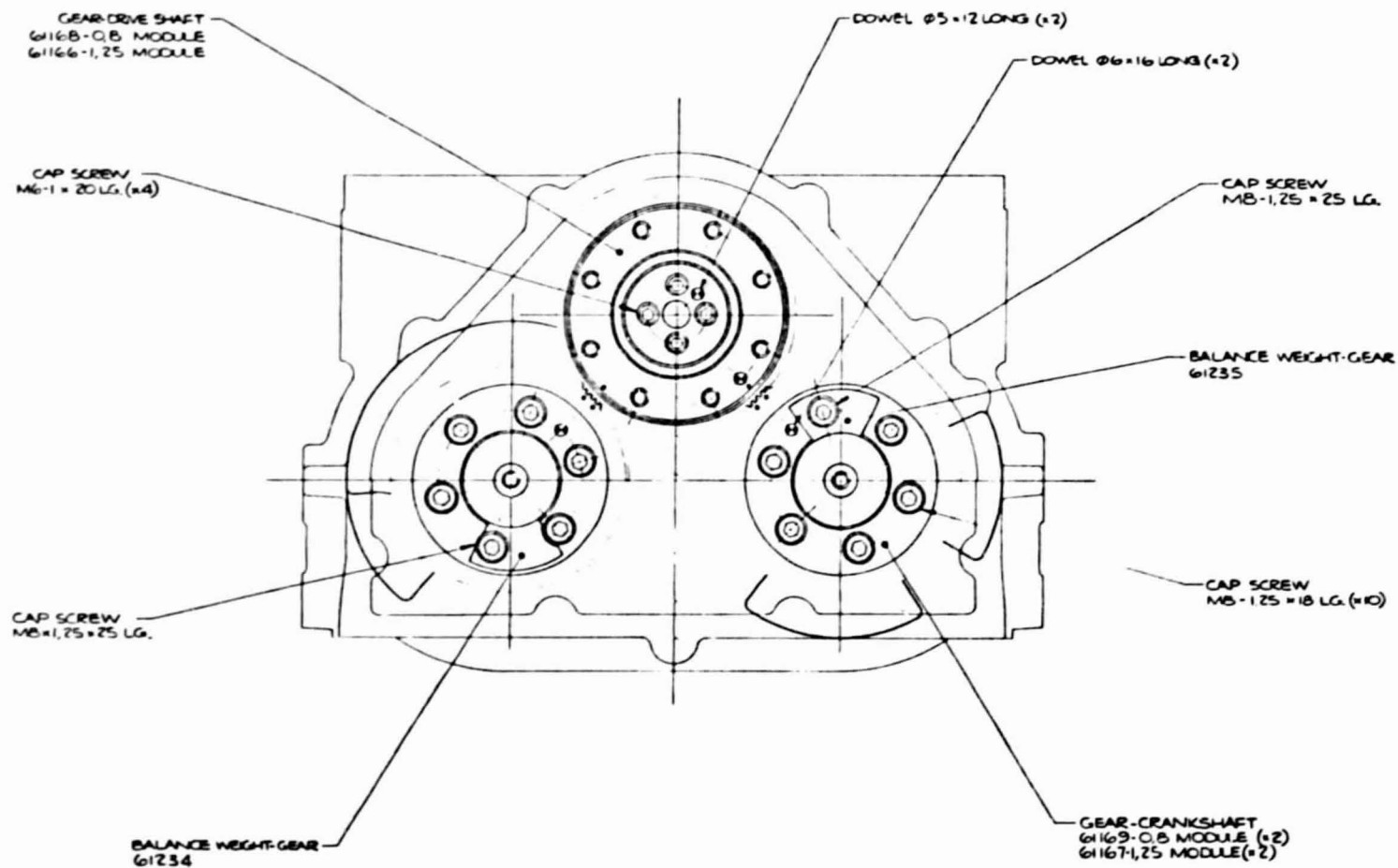
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OF POOR QUALITY

				327A-160	
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3274-202



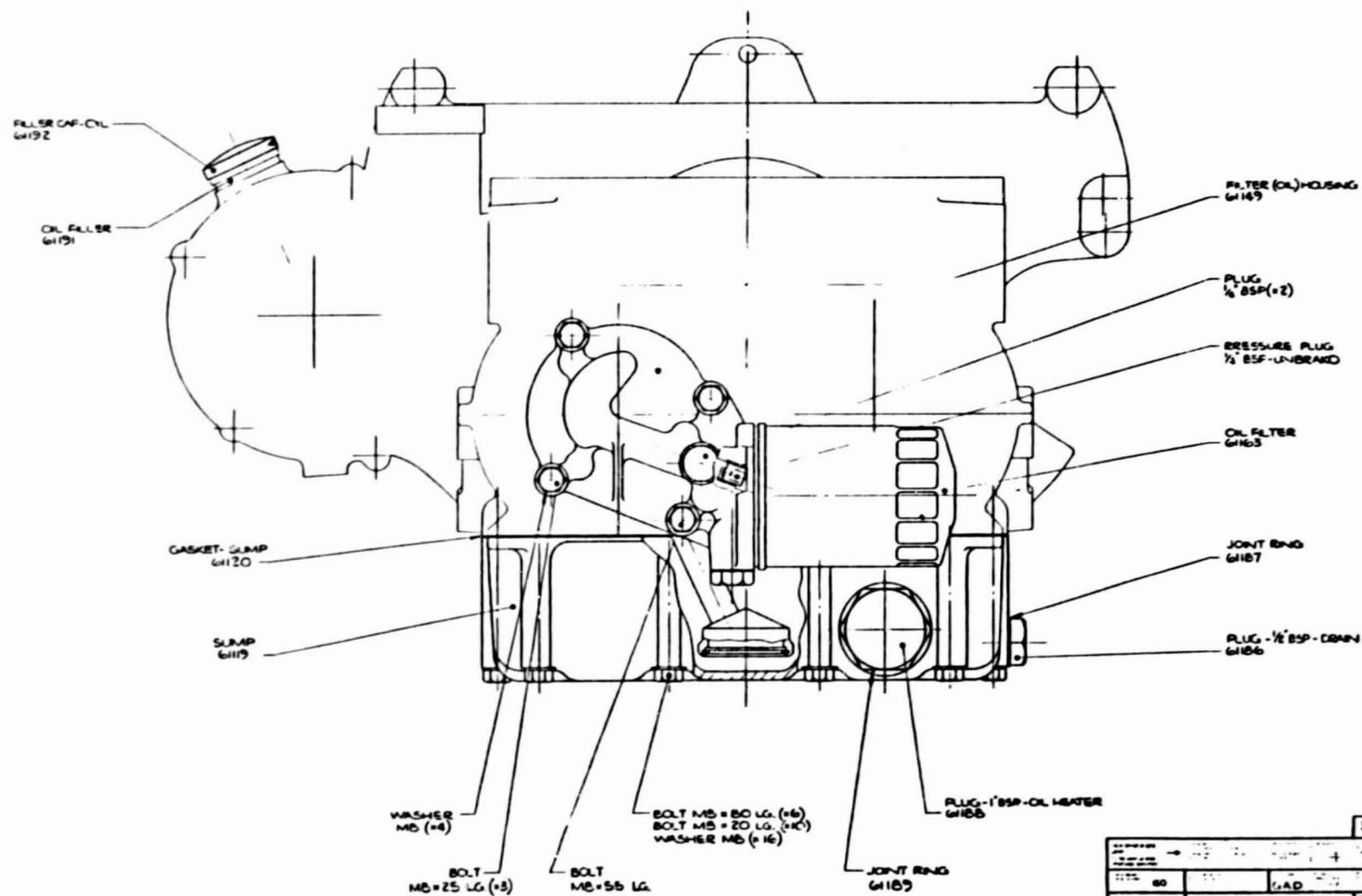
III-216



ORIGINAL PAGE IS
OF POOR QUALITY

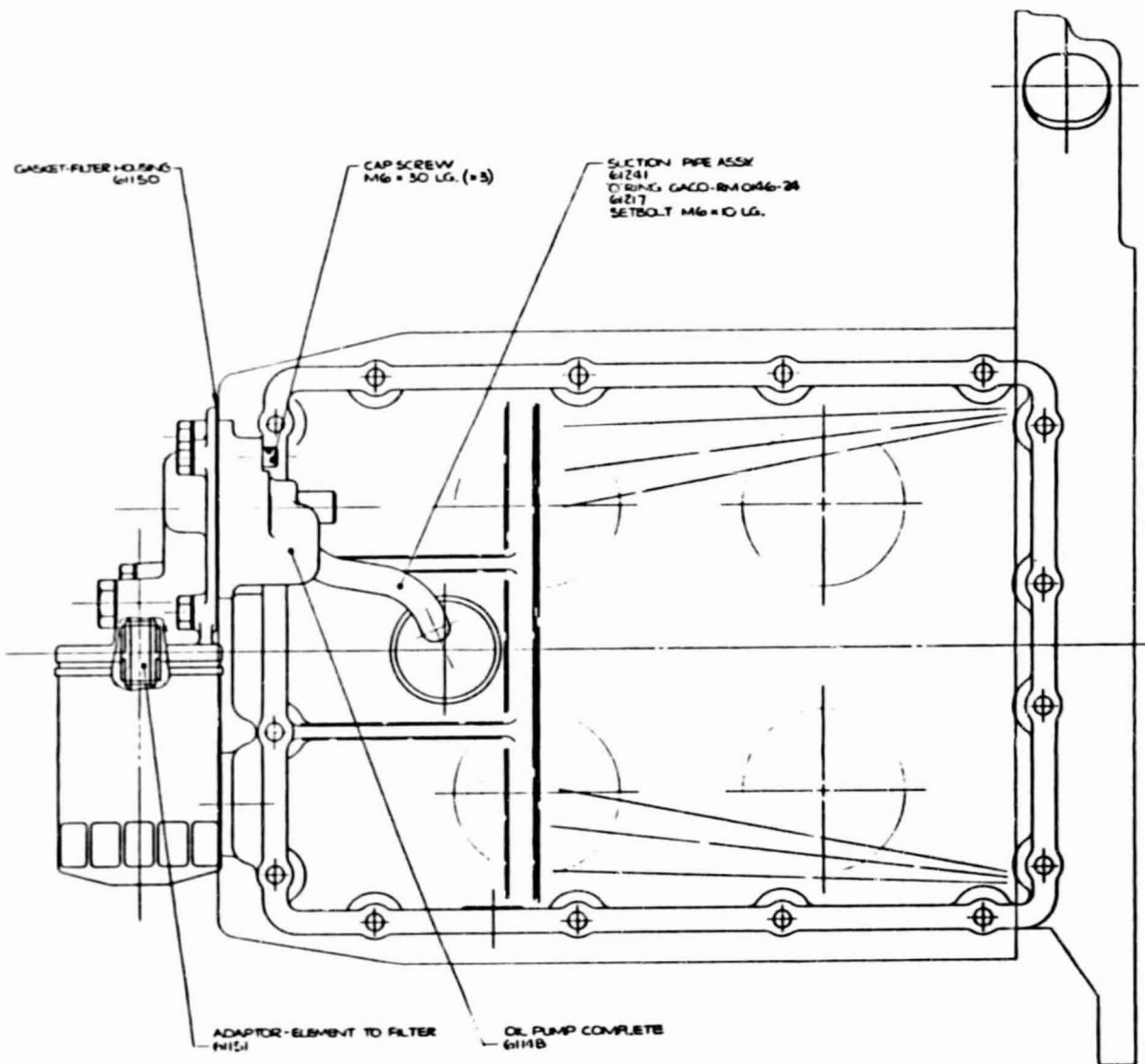
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111-217



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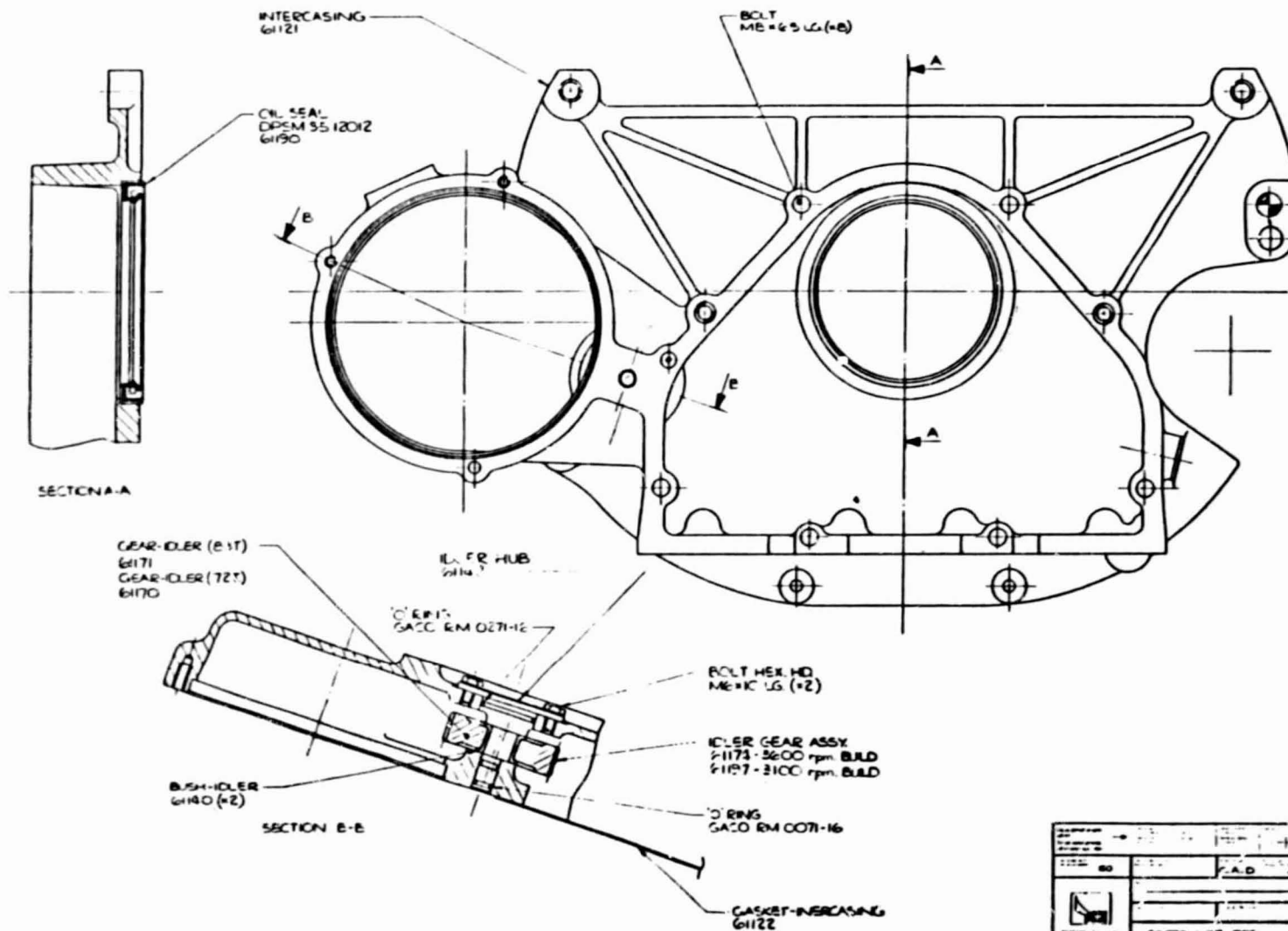
3276-208	
QTY 80	QAD
PARTS LIST DATA UTILIZATION SYSTEM	
1/2	1- G1208



3176-204	
REV. 1	REV. 2
REV. 3	REV. 4
REV. 5	REV. 6
REV. 7	REV. 8
REV. 9	REV. 10
REV. 11	REV. 12
REV. 13	REV. 14
REV. 15	REV. 16
REV. 17	REV. 18
REV. 19	REV. 20
REV. 21	REV. 22
REV. 23	REV. 24
REV. 25	REV. 26
REV. 27	REV. 28
REV. 29	REV. 30
REV. 31	REV. 32
REV. 33	REV. 34
REV. 35	REV. 36
REV. 37	REV. 38
REV. 39	REV. 40
REV. 41	REV. 42
REV. 43	REV. 44
REV. 45	REV. 46
REV. 47	REV. 48
REV. 49	REV. 50
REV. 51	REV. 52
REV. 53	REV. 54
REV. 55	REV. 56
REV. 57	REV. 58
REV. 59	REV. 60
REV. 61	REV. 62
REV. 63	REV. 64
REV. 65	REV. 66
REV. 67	REV. 68
REV. 69	REV. 70
REV. 71	REV. 72
REV. 73	REV. 74
REV. 75	REV. 76
REV. 77	REV. 78
REV. 79	REV. 80
REV. 81	REV. 82
REV. 83	REV. 84
REV. 85	REV. 86
REV. 87	REV. 88
REV. 89	REV. 90
REV. 91	REV. 92
REV. 93	REV. 94
REV. 95	REV. 96
REV. 97	REV. 98
REV. 99	REV. 100

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111-219



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3274-205	
80	F.A.D.
PARTS LIST ORIG.	
INTERCASING/IDLER ASSY 1-61205	

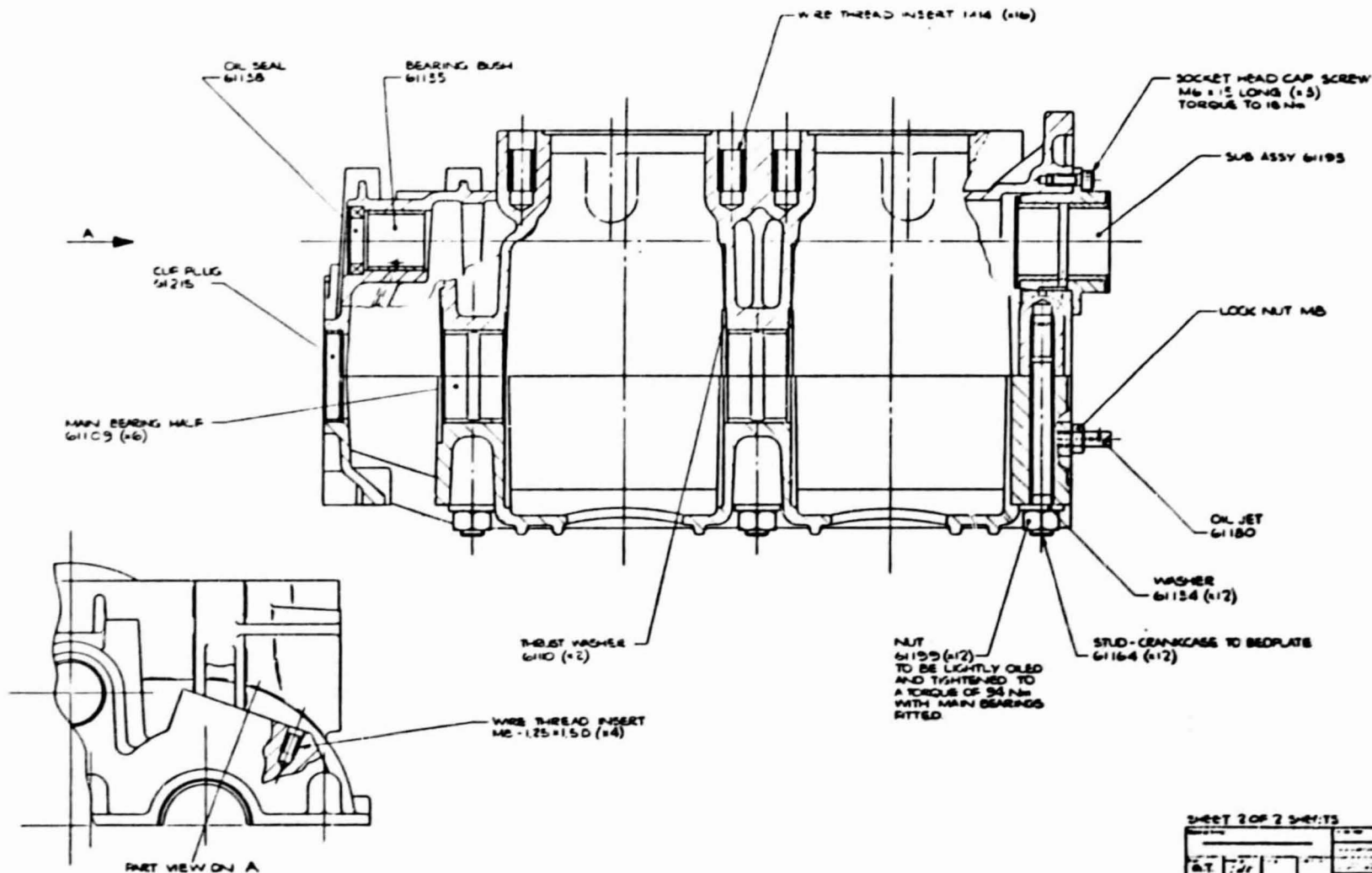
Diagram illustrating the crankcase assembly components and their assembly points:

- CRANKCASE 61116
- RING DOWEL 61137 (x2)
- GRUB SCREW M6-1 x 6 LG.
- RING DOWEL 61136 (x2)
- WASHER M8 (x7)
- HEX HEAD BOLT M8 x 45 LONG (x2) TORQUE TO 25 Nm
- BEDPLATE 61117
- P-9 M12 x 16 LONG

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SHEET 1 OF 2 SHEETS

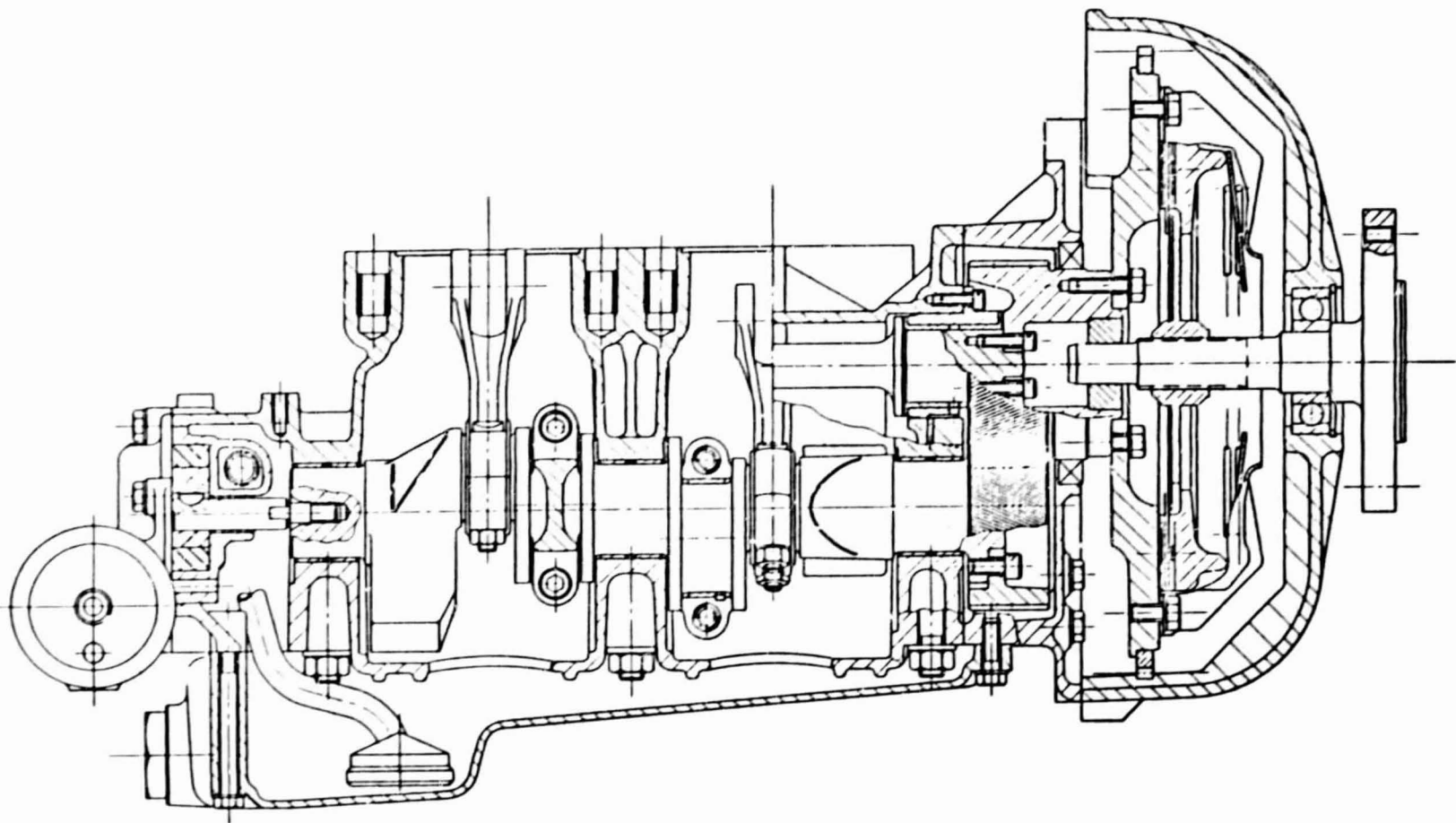
3274 - 206	
A 6 1/2 x 11 inch sheet	
UNITED STATES	
AMERICAN AIRLINES	
ATLANTA, GA.	
1 - 61206	



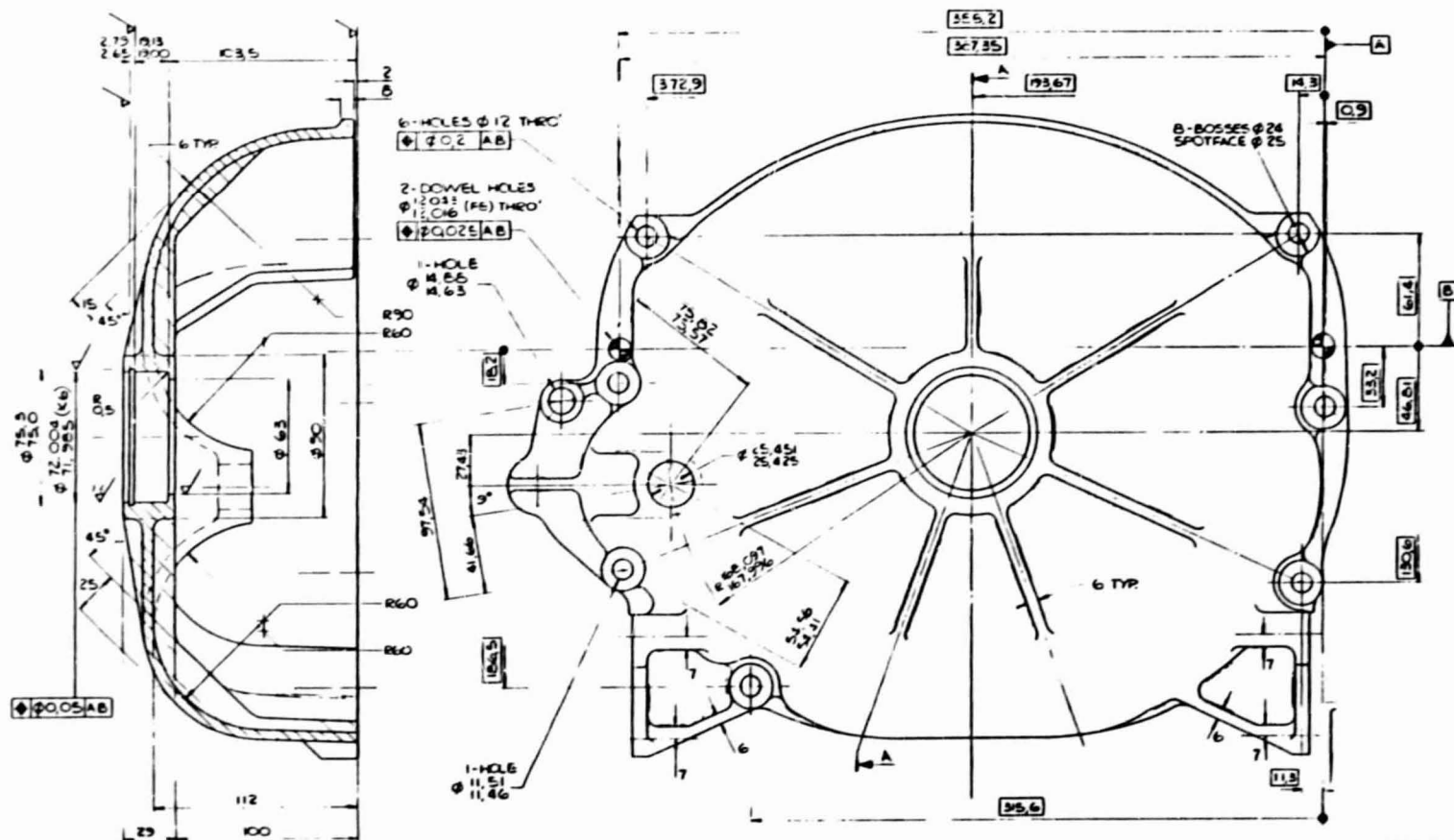
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100	15	15	15	15	15

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5276-216	
DESIGN	REV
DATE	BY
60	60
UNITED STATES	UNITED STATES
LONGITUDINAL SECTION WITH CLUTCH - SEE MCD 1 (BY 4 15-1 1951 - 10-11-1951)	
1:1	1:61216



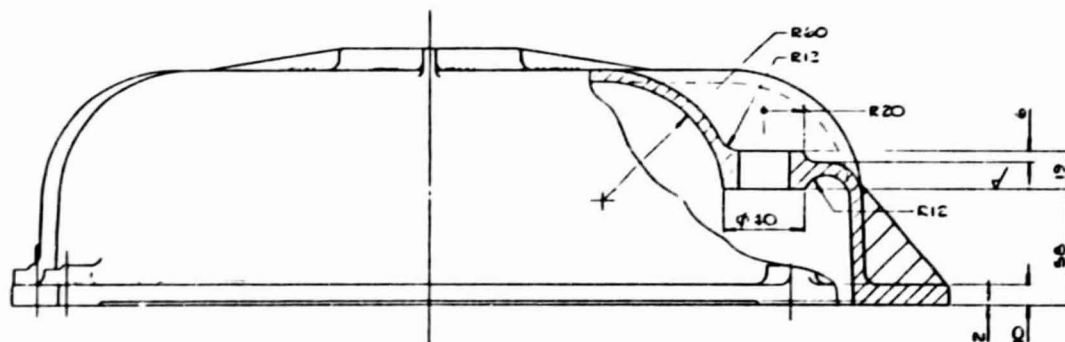
3278-20	
REV	1
DATE	10/10/60
BY	CTW
CHECKED BY	CTW
APPROVED BY	CTW
CLUTCH HOUSING	1-61219

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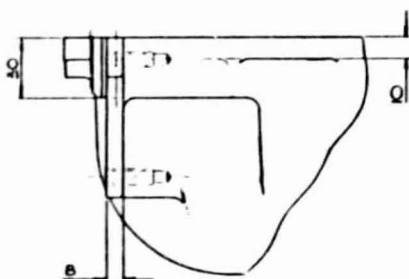
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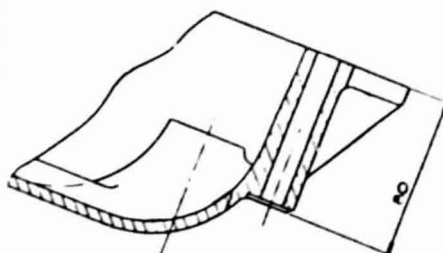
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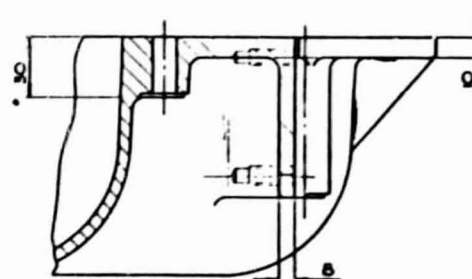
VIEW ON ARROW B
SEE SHEET 2



VIEW ON ARROW B
SEE SHEET 2



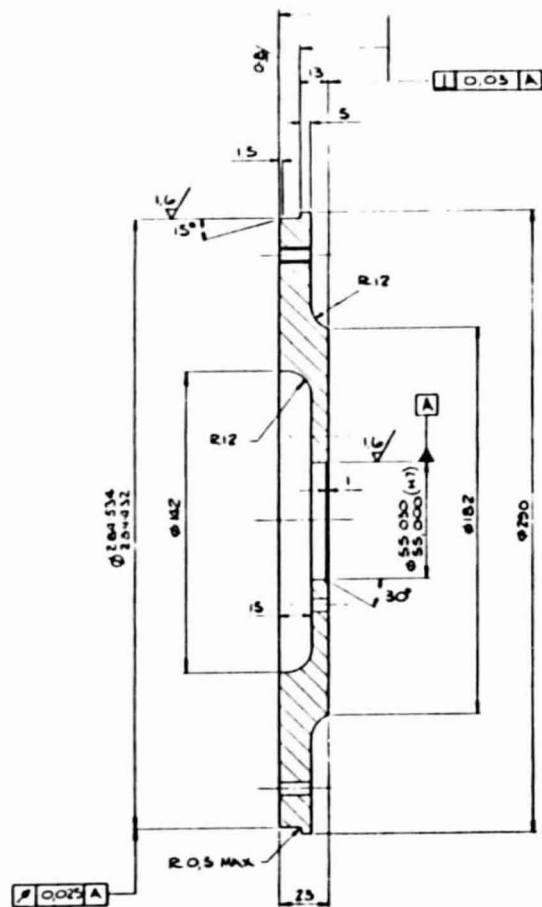
PART SECTION D-D
SEE SHEET 2



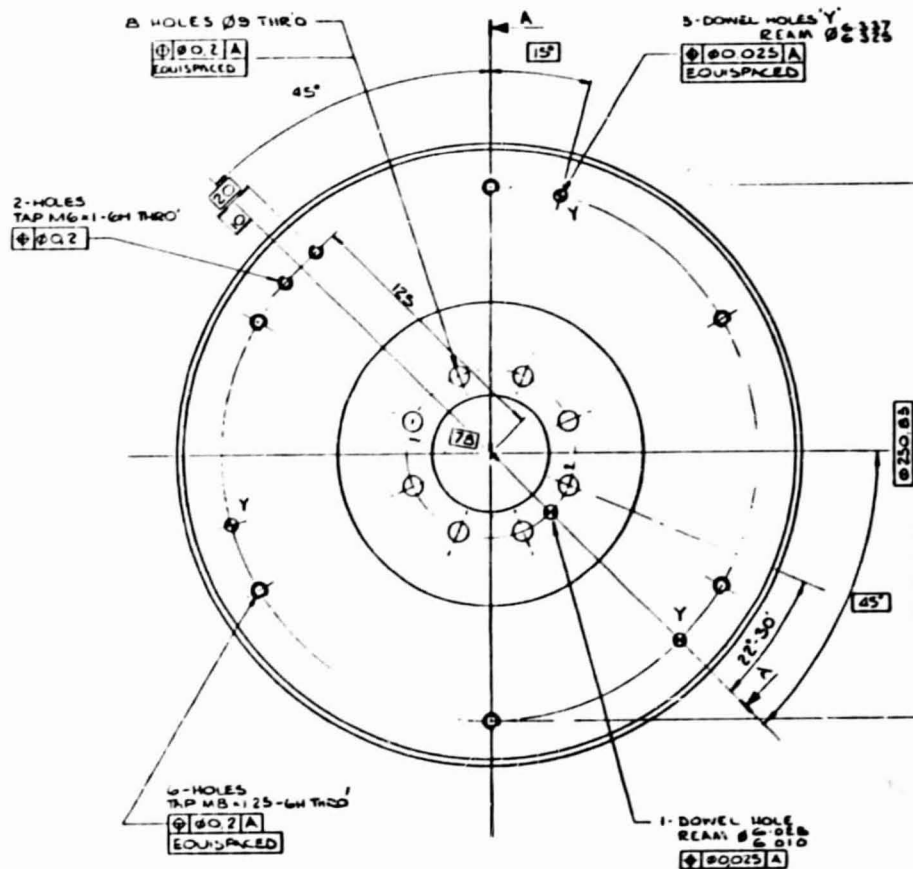
PART SECTION C-C
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QTY	1
DATE	10/15
BY	ETW
CLUTCH HOUSING	1-6120

111-226



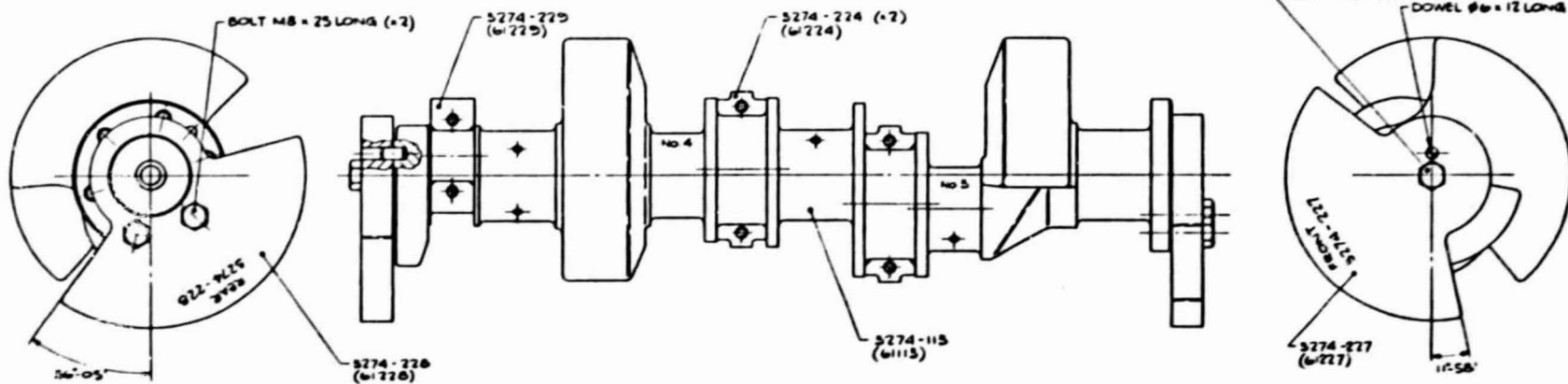
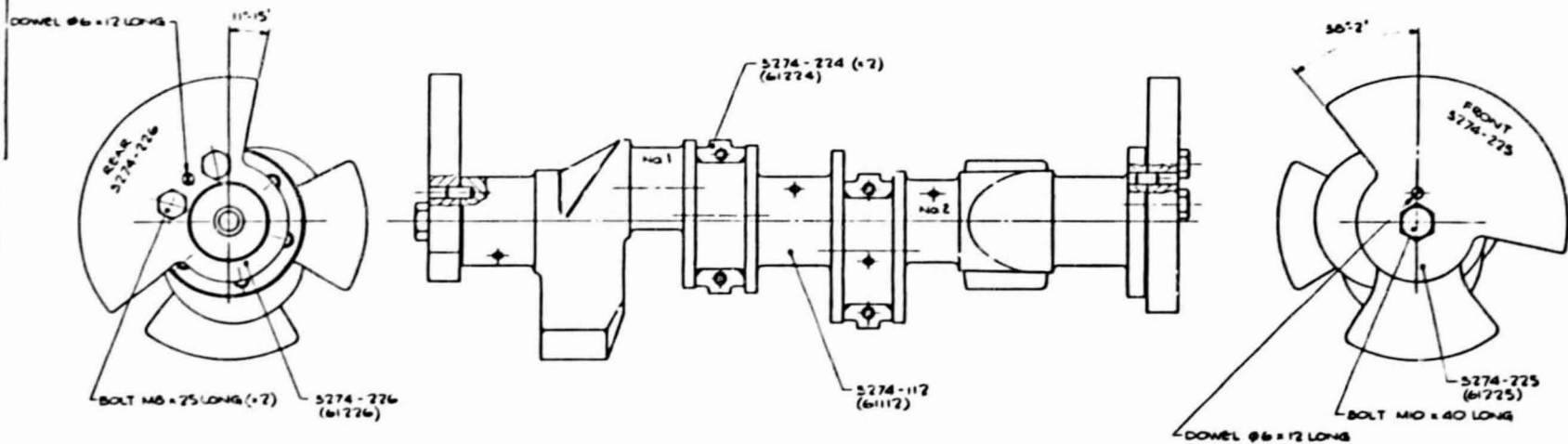
SECTION A-A



32/ UNLESS STATED OTHERWISE
REMOVE ALL BURS & SHARP EDGES

ORIGINAL PAGE IS
OF POOR QUALITY

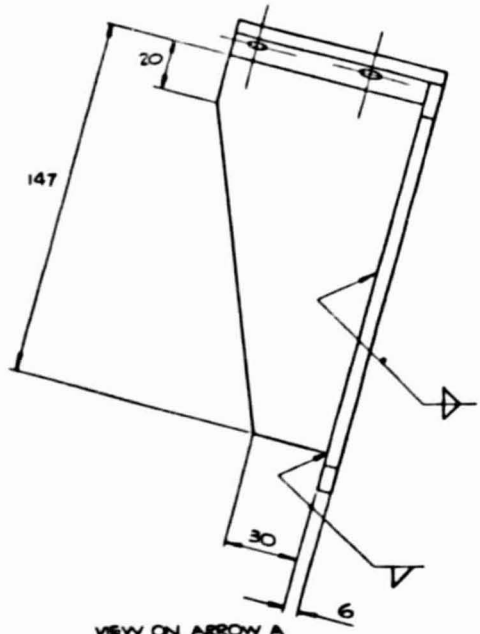
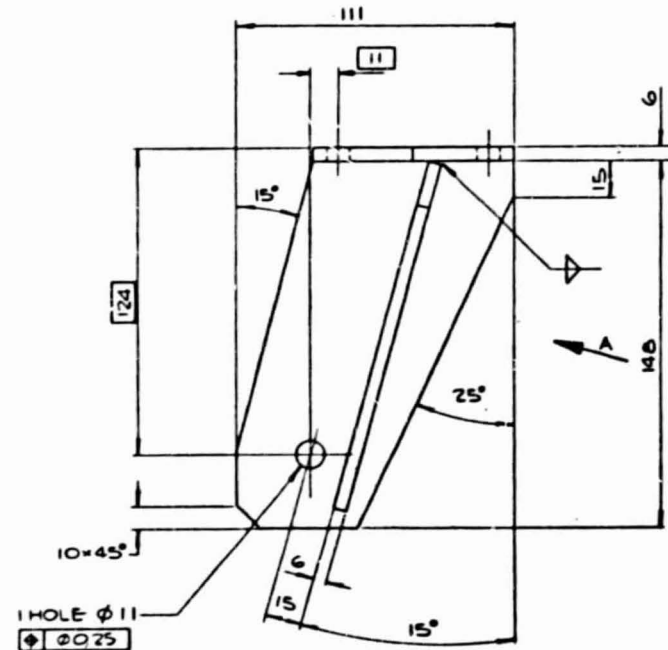
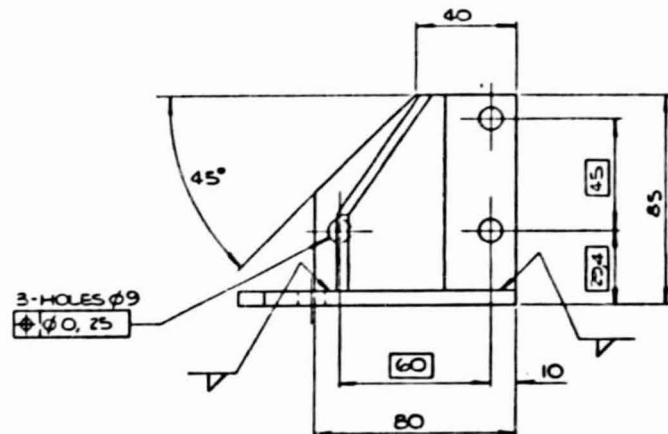
3274-722	
NO	Q76M20 8.370
UNITED STATES	FLYWHEEL
1-61222	



CRANKSHAFTS TO BE DYNAMICALLY BALANCED
TO WITHIN 20 GRAMME CENTIMETRES WHEN
SUPPORTED AT EACH END MAIN JOURNAL

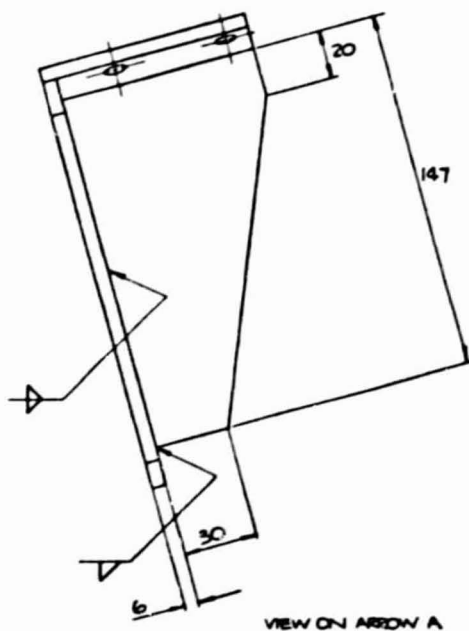
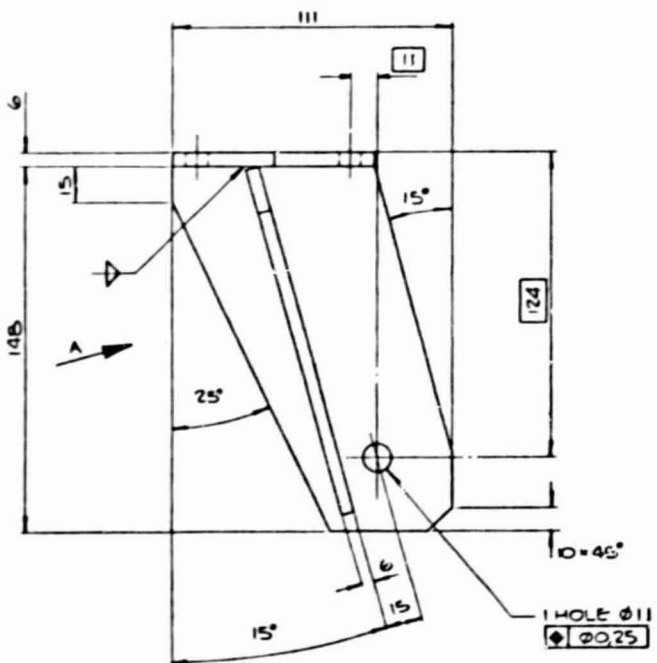
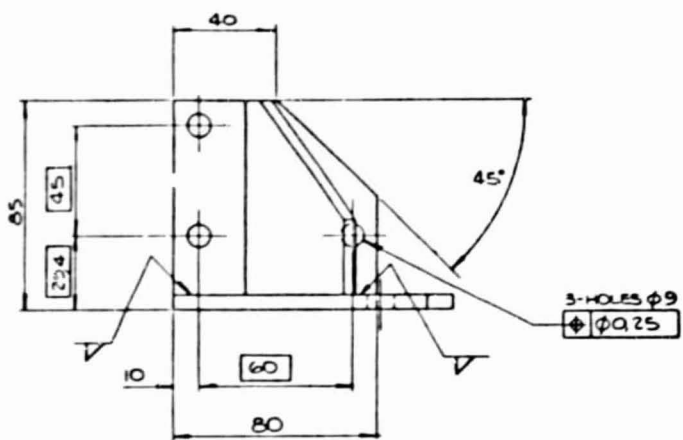
5274-232	
REV	1
DATE	1/1
BY	1/1
CHECKED	1/1
APPROVED	1/1
RECOMMENDATION FOR DYNAMICALLY BALANCING CRANKSHAFTS - SEE MOOT ENG	
1-61232	

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OF POOR QUALITY



50		G.A.D.		1:1	
R.H. BRACKET TO BEDPLATE		1-61236		5274-236	

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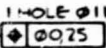


VIEW ON ARROW A

3274-237		GZ		1:1		1-61237	
L.H. BRACKET TO BEDPLATE		G.A.D.		1:1		1-61237	
STEEL PLATE ZEMOT (ENIA)		G.A.D.		1:1		1-61237	
FORMED TO PART		G.A.D.		1:1		1-61237	
GIFTED BY/TO		G.A.D.		1:1		1-61237	
GIFTED BY/TO		G.A.D.		1:1		1-61237	

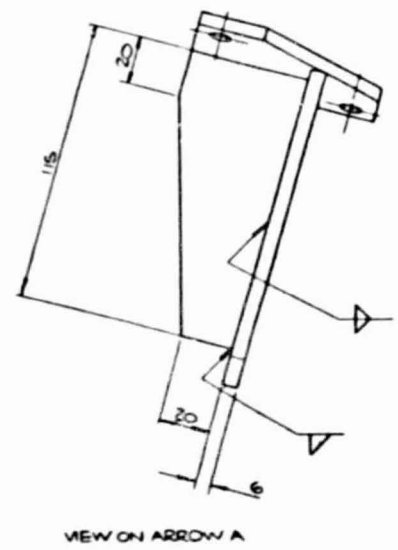
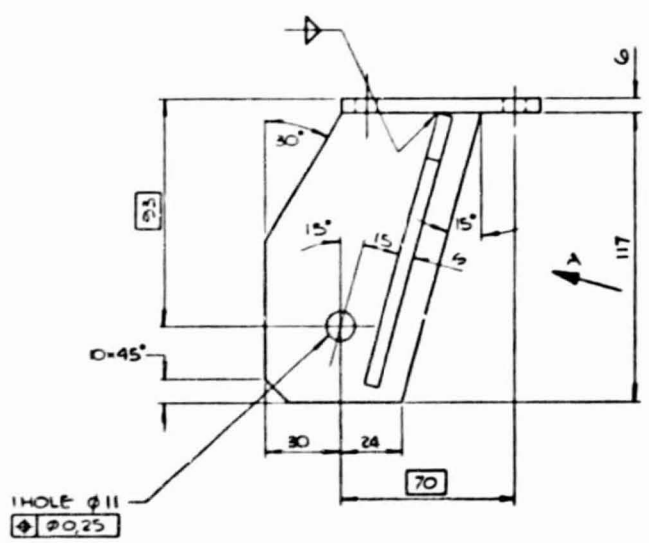
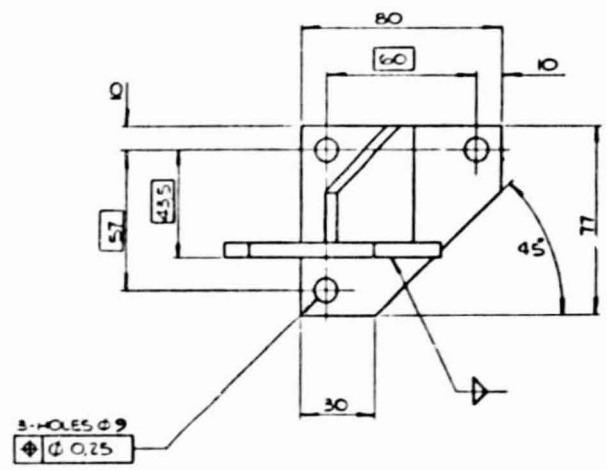
3274 - 238

R.H. BRACKET TO CLUTCH HOUSING

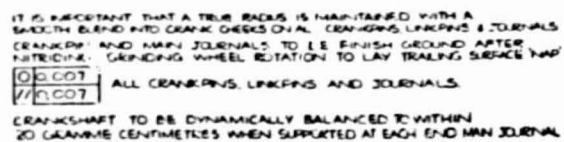


111-230


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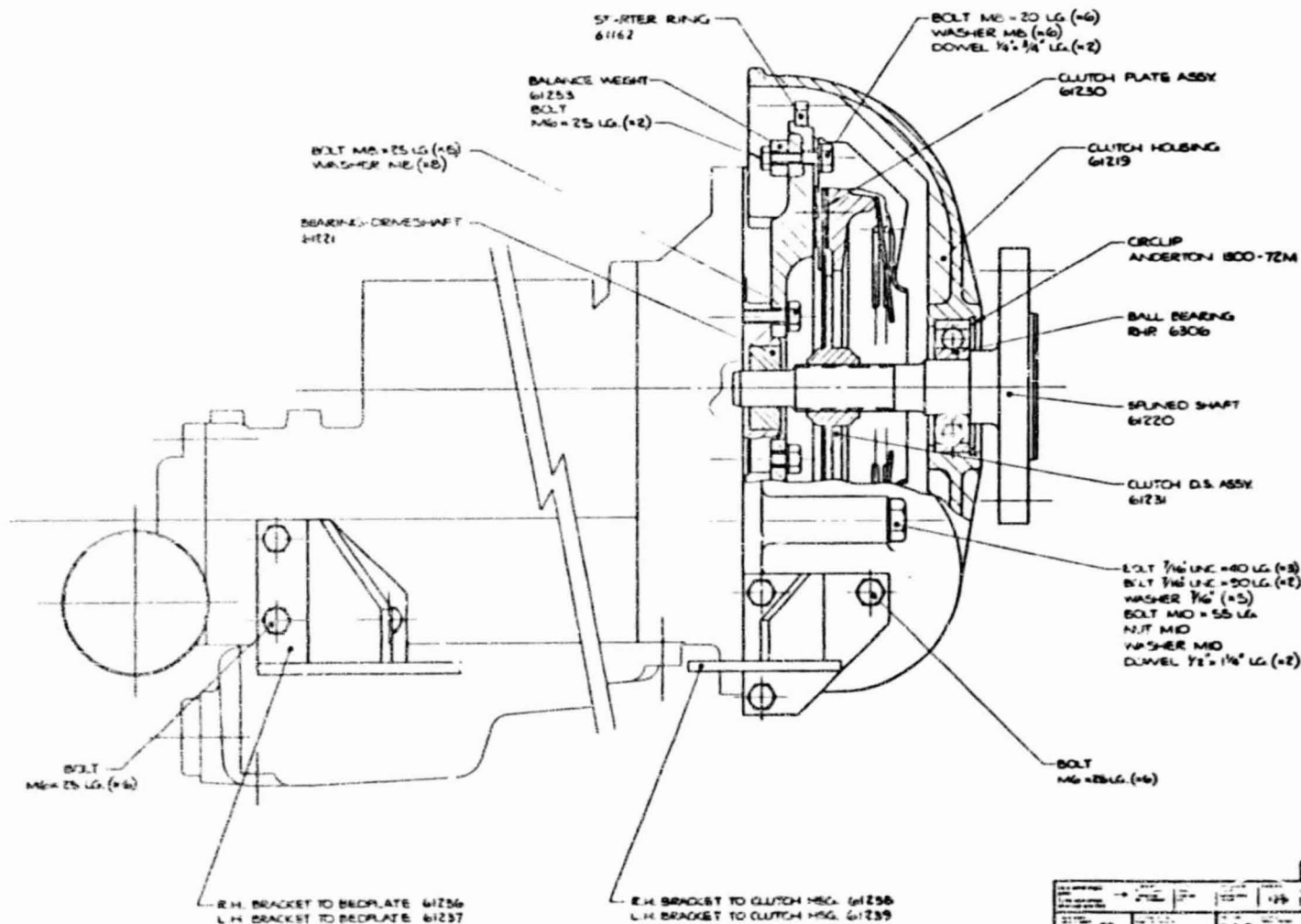
3274-239			
DESIGNED BY	DATE	APPROVED BY	REVISION
BY		DATE	
UNITED STATES	STEEL BRACKET (RMA)	1:1	
UNITED STATES	LH BRACKET TO CLUTCH HOUSING	1:1	
UNITED STATES		1-61239	



MATERIAL
 HS 130 PART 2 1970 722M28 (EN808)
 55 CHROMIUM NICKEL BASED HARTING STEEL.
 HARDEN AND TEMPER AS T CONDITION
 TENSILE STRENGTH 55 TON/IN²
 HARDNESS 248-302 BRINELL
 NITRICE ALLOVER EXCEPT WHERE SHOWN
 DEPTH OF CASE C.S. HARDNESS 627 BRINELL MIN.

<div style="float: right; border: 1px solid black; padding: 2px;"> 22M-240 </div>	
NO	SAC CHA
	<div style="text-align: center;"> SEE PAGES 11 CRANEHART NOS. 112 CRUMMERS </div>
<div style="text-align: center;"> UNITED STATES </div>	<div style="text-align: right;"> 1-61240 </div>

111-233

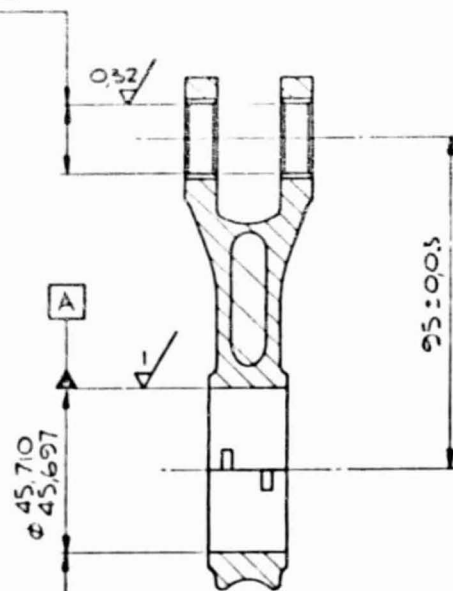


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5276/252	
DATE	11/1
BY	111
FOR	1-61242
APPROVED	1-61242

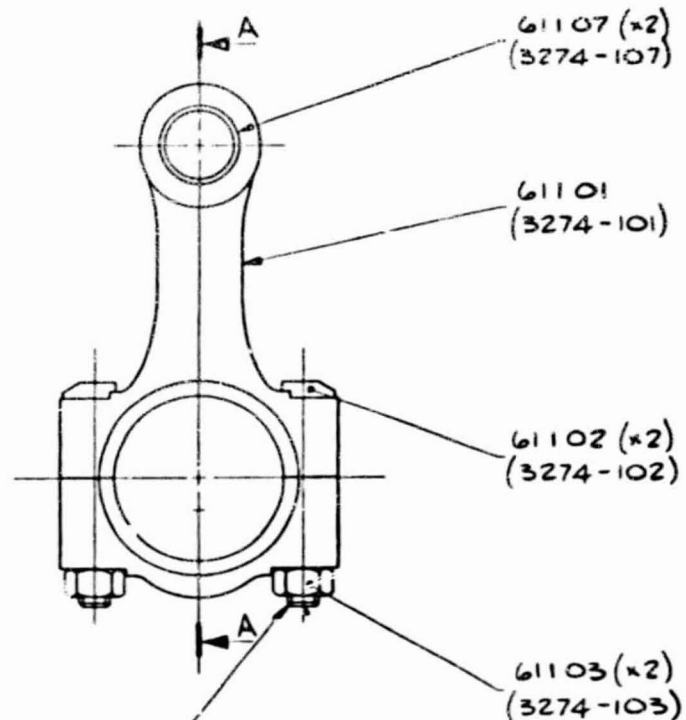
$\phi 20.021$
 $20.000 (H7)$

//	0.015	A
Q	0.004	



SECTION 'A-A'

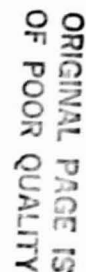
Q	0.004
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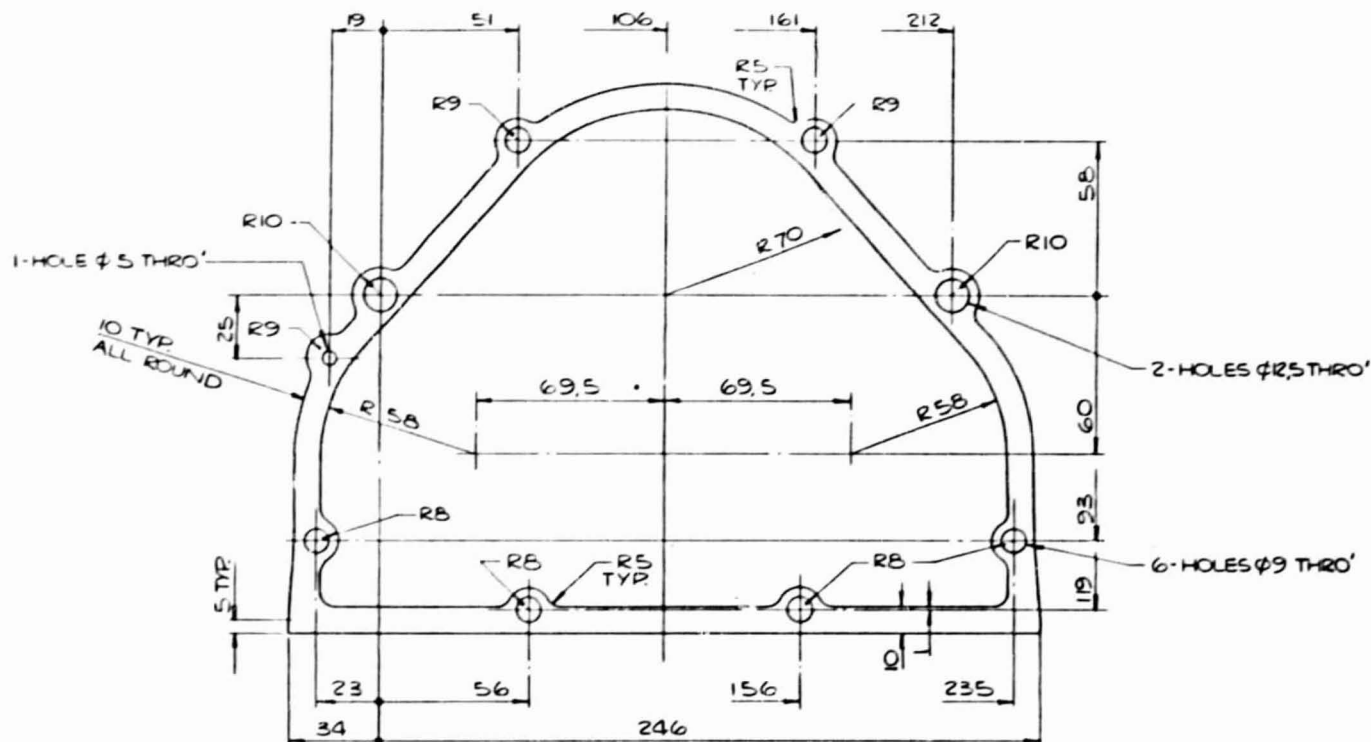
BOLTS TO BE LIGHTLY OILED ON
 WORKING SURFACES AND NUTS
 TIGHTENED TO A TORQUE OF 47 Nm
 PRIOR TO FINISH MACHINING

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 OF POOR QUALITY

3274-104	
Call to arms: For the purpose of identifying the drawing	Date: Drawn by: Checked by: Approved by:
ISO	A. DEAN
UNITED STIRLING	CONNECTING ROD ASSEMBLY
2-61104	2-61104



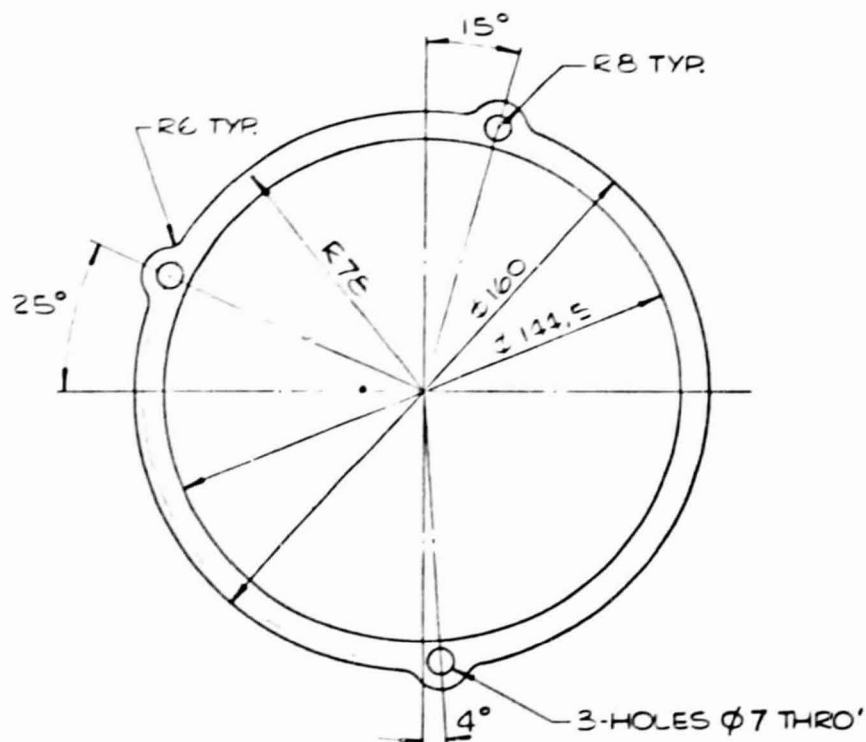
Do a stress analysis for the entire assembly (pressure loading)		→	Date 5/2/75	Time 10:00 AM	Project 374	3274-114
Item No. 60	Description 60	Material 316	Quantity 1	Unit 1	Price 3.1	3274-114
CASTING SG IRON GRADE 374		1.1	1.1	1.1	1.1	1.1
CONNECTING ROD - HYDROGEN PUMP		1/1	1/1	1/1	1/1	1/1
2.61114						



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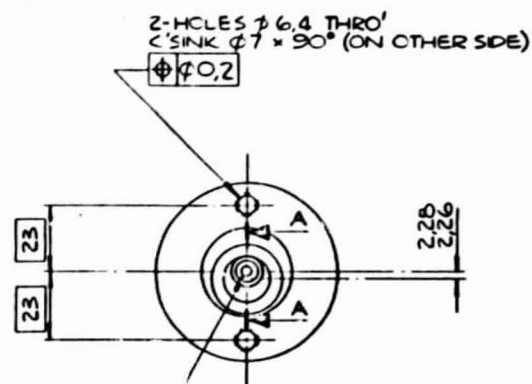
3274-122	
DATE: 1960 BY: DJW CHECKED: vii APPROVED: 1/1 UNITED STEELING 1000 100 100	COOPERS G90 0.25 THK INTERCASING GASKET 2-61122

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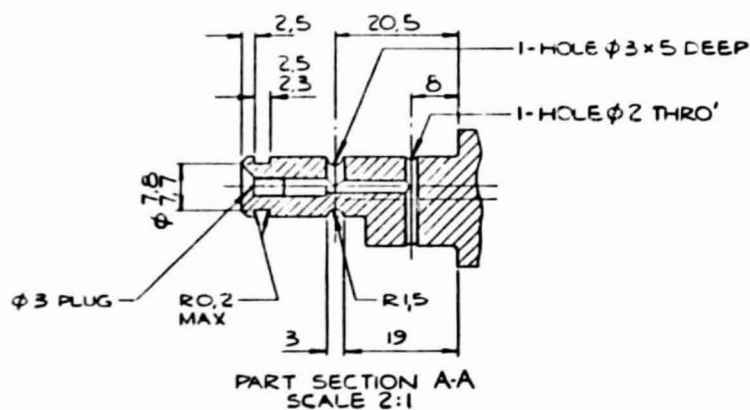


111-237

		3274-131	
COOPERS G80 0,25 THK.	1:1		
GASKET -	1/1		
INTERCASING/WATER PUMP	2-61131		



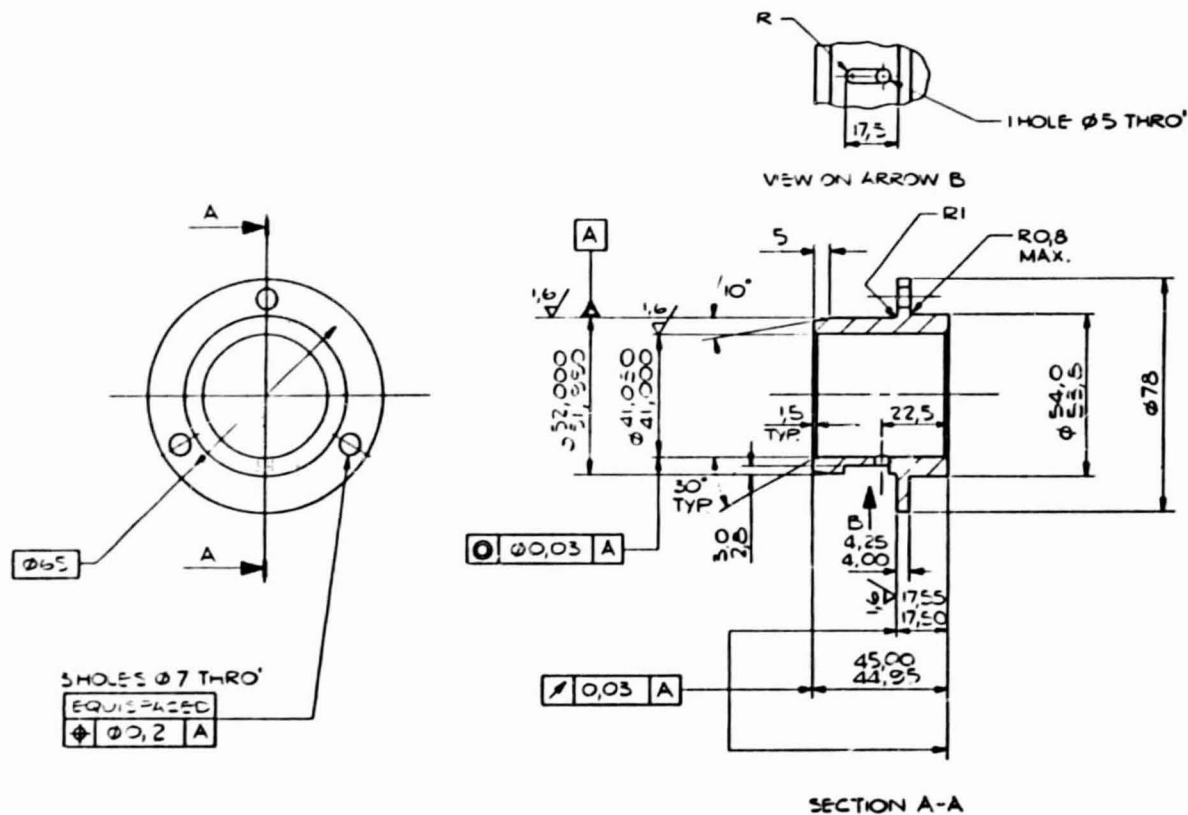
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- 1-HOLE $\phi 2 \times 28$ DEEP
C'DRILL TYPE A 20/80 IF REQUIRED.
C'BORE $\phi 3 \times 14$ DEEP.

CASEHARDEN 0,5/0,7 DEEP TO Rc 60 MIN.
WHERE SHOWN THUS * * * *
MACHINE ³²/ UNLESS SHOWN OTHERWISE

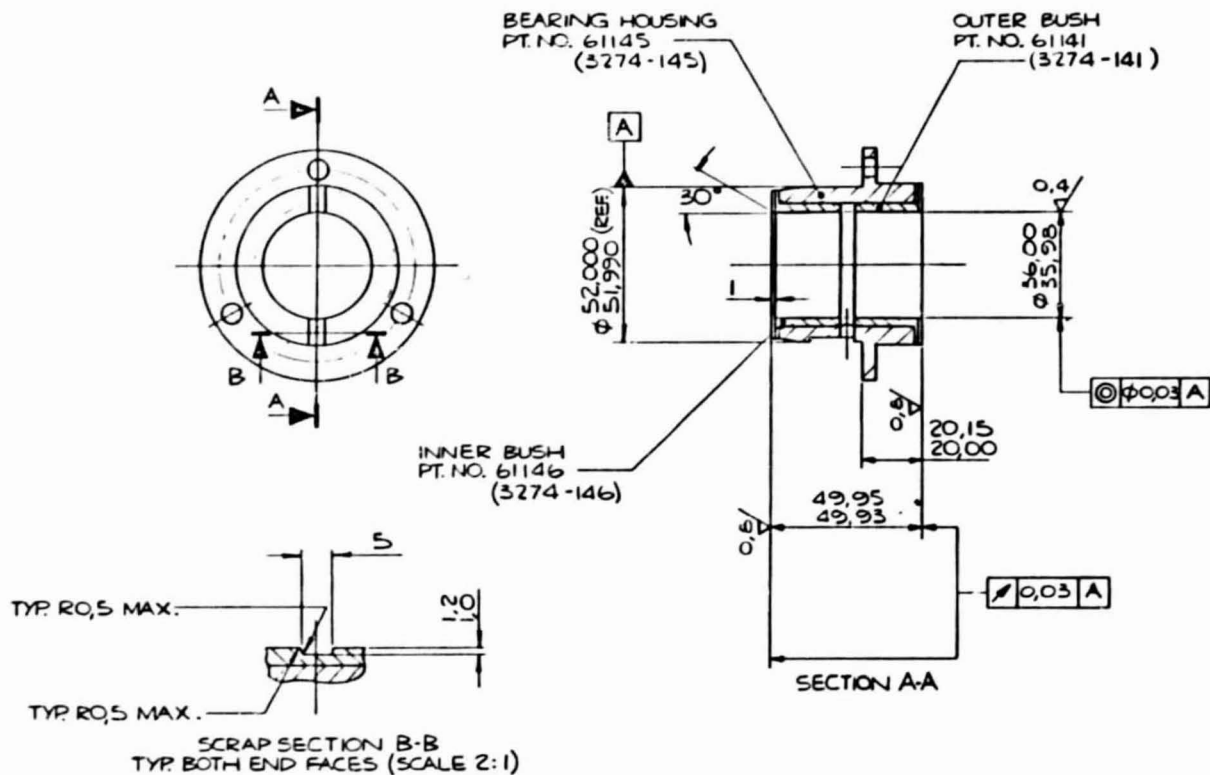
Do not remove original Do not make additional changes after issue		0.25	[X]	[X]	[X]	3274-142
Type of material Identification	ISO	P.S.W.	[X]	[X]	[X]	1/1
STEEL B3 970 PT. 1 1972 GEOMIC (EN32C)		1:1, 2:1		1/1		B
HUB-1DLR		2-61142		2-61142		2-61142



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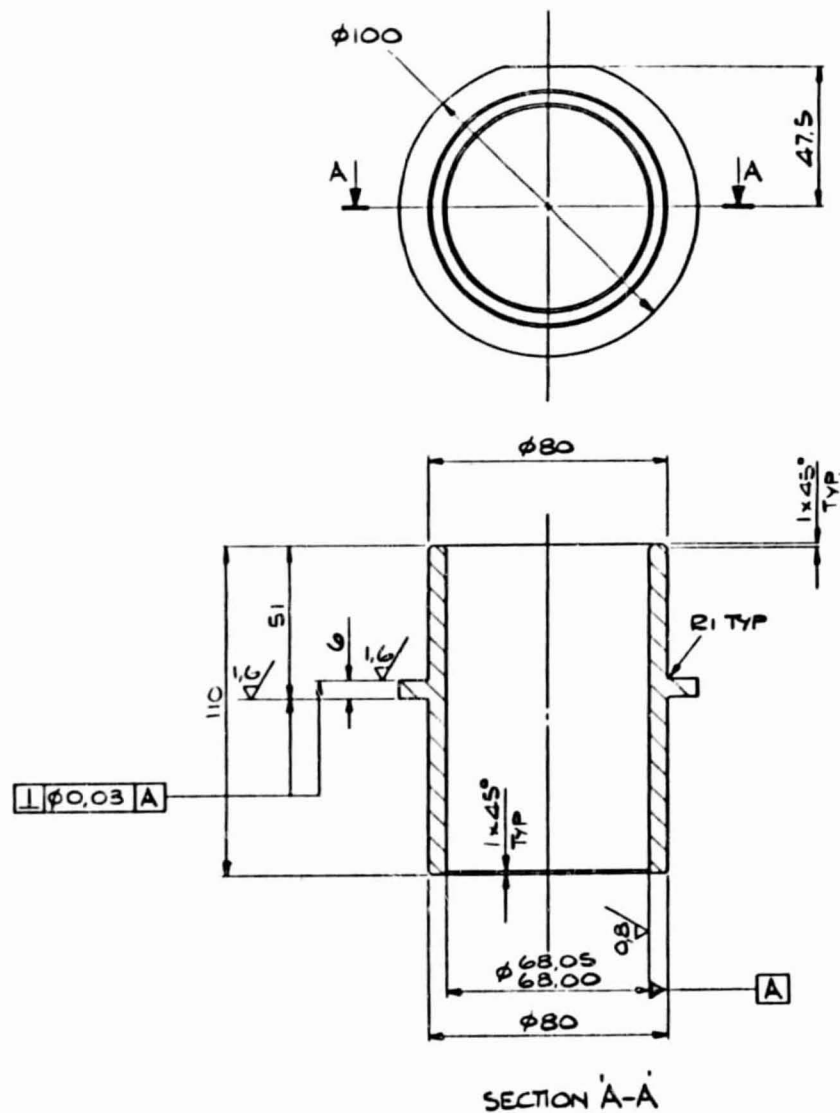
NOTE - THIS PART TO BE ASSEMBLED WITH
BEARING BUSHES FOR FINAL MACHINING
SEE DRG. NO. 61147 (5274-147)

5274-145		327	
Part Name	REAR BEARING HOUSING	Part No.	5274-145
Material	STEEL - S5 970 PT 1972	Scale	1:1
ISO	G.T.	1/1	A
UNITED STEELING	2-61145		



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5274-147		AS SHOWN	
ISO	G.T.	2.47	1:1
REAR BEARING HOUSING ASSEMBLY		1/1	A
2-61147			

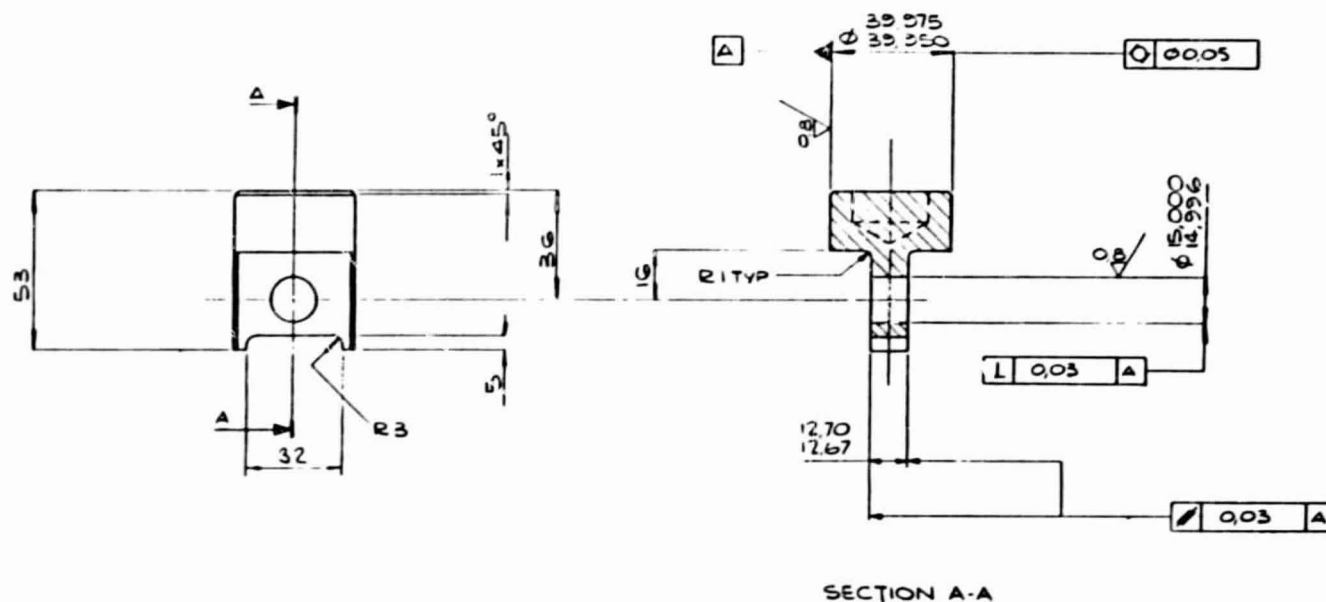


REMOVE ALL BURRS & SHARP EDGES

[illegible]

DIB is initial design for the initial copy of drawings submitted		1. Description of the item	2. Item number and date	3. Item number and date	4. Item number and date	5. Item number and date	6. Item number and date	7. Item number and date	8. Item number and date	9. Item number and date	10. Item number and date	11. Item number and date	12. Item number and date	13. Item number and date	14. Item number and date	15. Item number and date	16. Item number and date	17. Item number and date	18. Item number and date	19. Item number and date	20. Item number and date	21. Item number and date	22. Item number and date	23. Item number and date	24. Item number and date	25. Item number and date	26. Item number and date	27. Item number and date	28. Item number and date	29. Item number and date	30. Item number and date	31. Item number and date	32. Item number and date	33. Item number and date	34. Item number and date	35. Item number and date	36. Item number and date	37. Item number and date	38. Item number and date	39. Item number and date	40. Item number and date	41. Item number and date	42. Item number and date	43. Item number and date	44. Item number and date	45. Item number and date	46. Item number and date	47. Item number and date	48. Item number and date	49. Item number and date	50. Item number and date	51. Item number and date	52. Item number and date	53. Item number and date	54. Item number and date	55. Item number and date	56. Item number and date	57. Item number and date	58. Item number and date	59. Item number and date	60. Item number and date	61. Item number and date	62. Item number and date	63. Item number and date	64. Item number and date	65. Item number and date	66. Item number and date	67. Item number and date	68. Item number and date	69. Item number and date	70. Item number and date	71. Item number and date	72. Item number and date	73. Item number and date	74. Item number and date	75. Item number and date	76. Item number and date	77. Item number and date	78. Item number and date	79. Item number and date	80. Item number and date	81. Item number and date	82. Item number and date	83. Item number and date	84. Item number and date	85. Item number and date	86. Item number and date	87. Item number and date	88. Item number and date	89. Item number and date	90. Item number and date	91. Item number and date	92. Item number and date	93. Item number and date	94. Item number and date	95. Item number and date	96. Item number and date	97. Item number and date	98. Item number and date	99. Item number and date	100. Item number and date
150		STEEL BS970 Z20M07 (ENIA)		RECIPROCATING MASS - POWER PISTON		2-61154																																																																																															

Del in correct original place For correct quantity please refer to specifications		Manufacturer's Part No. Part No. as furnished	Date of Receipt Date of Issue Date of Disposal	Serial No. Quantity Remarks Remarks Remarks	Sample No. Sample Date Sample Location	Material Description Remarks	No. of Pages 32/
Type of Material Material Code	ISO	Date of Receipt Date of Issue Date of Disposal	Date of Receipt Date of Issue Date of Disposal	Date of Receipt Date of Issue Date of Disposal	Date of Receipt Date of Issue Date of Disposal	Date of Receipt Date of Issue Date of Disposal	Date of Receipt Date of Issue Date of Disposal
CAST IRON BS1492 GRADE 17						1:1	1:1
LINER - HYDROGEN PUMP						2. G1155	2. G1155

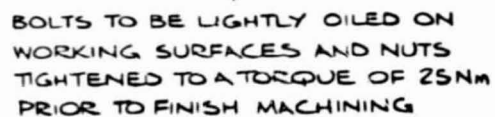


HOLE Ø 25
DEPTH TO BE MODIFIED TO
ACHIEVE A WEIGHT OF 250±5 GRAMMES

REMOVE ALL BURRS & SHARP EDGES
32/ UNLESS STATED OTHERWISE

3274-15G					
Part Name	Part Number	Part Description	Part Material	Part Quantity	Part Unit
STEEL 65870	220M07 (ENIA)	RECIPROCATING MASS	- HYDROGEN PUMP	2-6115G	
UNITED STEELING	UNIT 6115G				

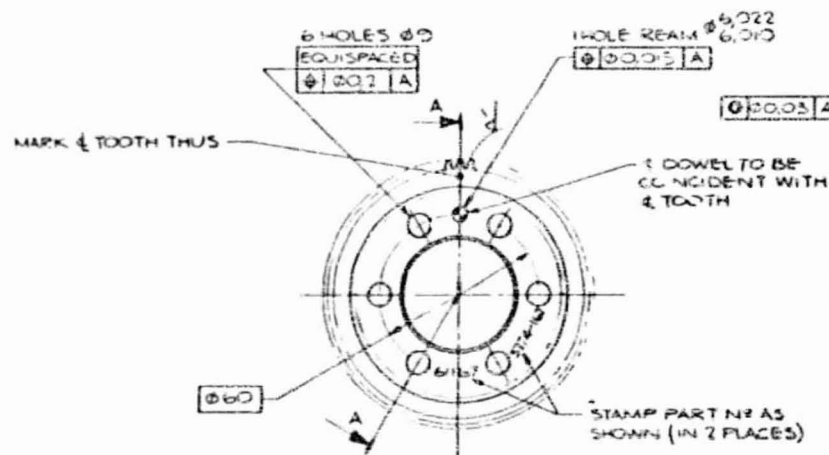
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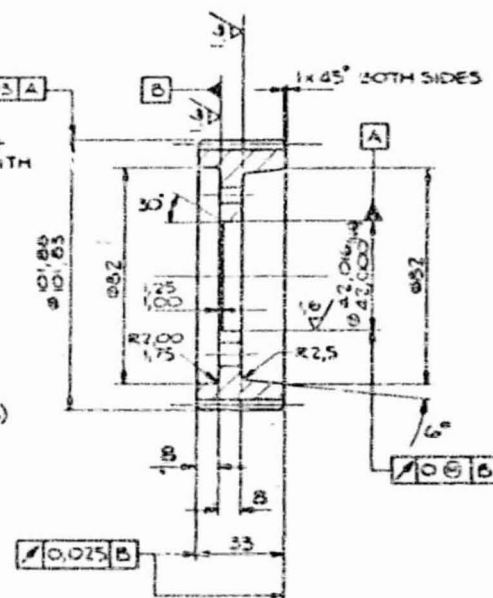


GEAR TO BE CROWNED
32/ UNLESS SHOWN OTHERWISE
REMOVE ALL BURRS & SHARP EDGES

3274 - 166	
3025	527
160	1:1
1/1	A
2- 61166	2- 61166



TYPE OF GEAR	STRAIGHT SPUR
NO OF TEETH	80
MODULE	1.25
BASIC RACK TOOTH FORM	BS 436 PTB 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE DIA.	99.360
HAND	
LEAD	116.5
HELIX ANGLE AT REF. CY.	
CTR. DIST. WITH MATING GEAR	99.45/99.40
DEGR. OF MATING GEAR	6116.0 (3274-167)
ADDENDUM MOD. COEFF.	
BACKLASH	
CHORDAL THICKNESS AT RCD	
CHORDAL ADDENDUM AT RCD	
SPAN GAUGE DIM. TEETH	



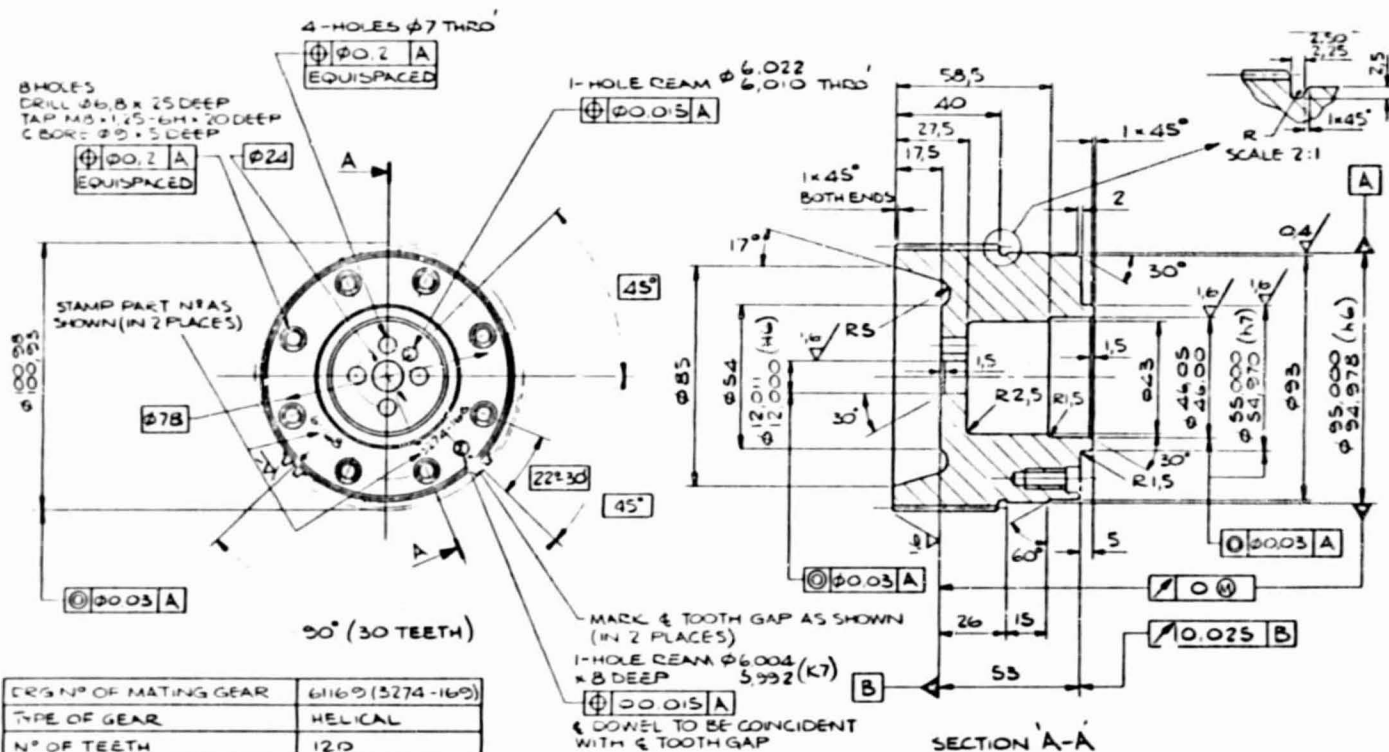
SECTION A-A

REMOVE ALL BURRS & SHARP EDGES

MACHINE $\frac{3.2}{\sqrt{}}$ UNLESS OTHERWISE STATED



		3274-167	
Part Name	STRAIGHT SPUR GEAR - CRANKSHAFT	Part No.	3274-167
Material	STEEL 25 DROPT 1971	Heat Treat	1:1
Finish	AS SUPPLIED (ENHANCED HARDENED GEAR)	Surface Finish	1:1
Quantity	1	Unit	1
Drawn By	UNITED STIRLING	Checked By	A
Scale	2-61167	Notes	

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DRG NO OF MATING GEAR	61169 (5274-169)
TYPE OF GEAR	HELICAL
Nº OF TEETH	120
MODULE	0.3
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE DIA	93.336
HAND	L.H
LEAD	1165.3
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	99.05 / 99.40
ADDENDUM MOD COEFF	NIL
BACKLASH	

GEAR TO BE CROWNED
3.2 / ∇ UNLESS SHOWN OTHERWISE
REMOVE ALL BURRS & SHARP EDGES

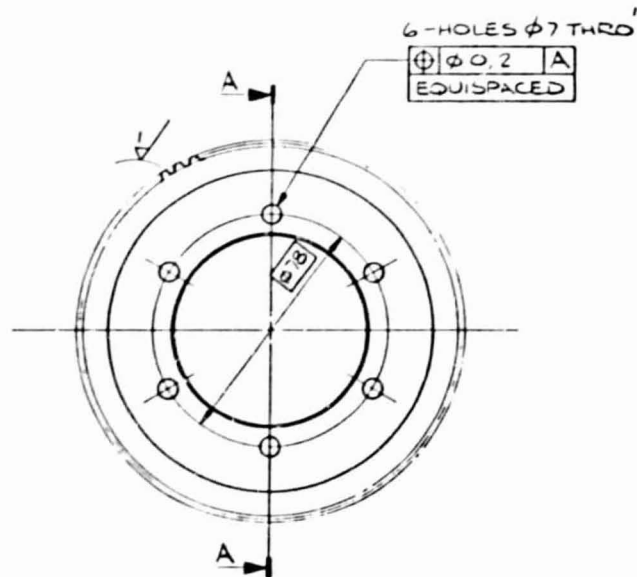
						3274-168
DATE OF ORDER 09-01-68	QUANTITY 10.5	CHECKED BY <input checked="" type="checkbox"/>	REMARKS ✓	APPROVED BY 	RECEIVED BY <input checked="" type="checkbox"/>	
60	STEEL BS 970 PT 3 1971 ISSUES (ENCL) CHAP. ENDS & GNS			151		
 UNITED STEEL MILLS CO. BALTIMORE, MD.	HELICAL GEAR-DRIVESHAFT			1/1	A	
				2-61168		

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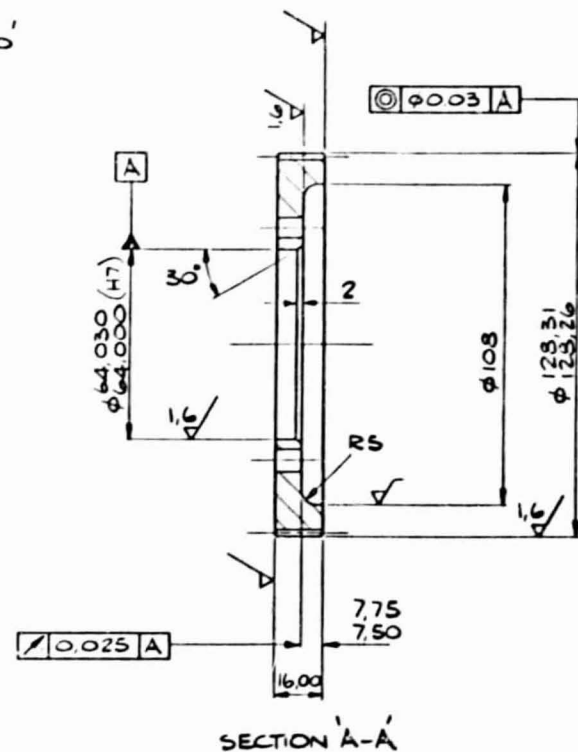
[illegible]

3274-171	
01 is serial single 02 is serial double 03 is serial triple 04 is serial quadruple 05 is serial quintuple 06 is serial sextuple 07 is serial septuple 08 is serial octuple 09 is serial nonuple 10 is serial decuple 11 is serial undecuple 12 is serial duodecuple 13 is serial tredecuple 14 is serial quattuordecuple 15 is serial quindecuple 16 is serial sexdecuple 17 is serial septendecuple 18 is serial octodecuple 19 is serial novendecuple 20 is serial vigintuple 21 is serial unvigintuple 22 is serial bivigintuple 23 is serial trivigintuple 24 is serial quadvigintuple 25 is serial quinvigintuple 26 is serial sexvigintuple 27 is serial septenvigintuple 28 is serial octovigintuple 29 is serial novenvigintuple 30 is serial trigintuple 31 is serial untrigintuple 32 is serial bistrigintuple 33 is serial tristrigintuple 34 is serial quatrstrigintuple 35 is serial quintrigintuple 36 is serial sextrigintuple 37 is serial septenstrigintuple 38 is serial octostrigintuple 39 is serial novenstrigintuple 40 is serial tetragintuple 41 is serial untetragintuple 42 is serial bitetragintuple 43 is serial tritetragintuple 44 is serial quattretagintuple 45 is serial quintetragintuple 46 is serial sextetragintuple 47 is serial septetragintuple 48 is serial octetragintuple 49 is serial novetragintuple 50 is serial pentagintuple 51 is serial unpentagintuple 52 is serial bipentagintuple 53 is serial tripentagintuple 54 is serial quattropentagintuple 55 is serial quinpentagintuple 56 is serial sexpentagintuple 57 is serial septempentagintuple 58 is serial octopentagintuple 59 is serial novempentagintuple 60 is serial hexagintuple 61 is serial unhexagintuple 62 is serial bihexagintuple 63 is serial trihexagintuple 64 is serial quattrhexagintuple 65 is serial quinhexagintuple 66 is serial sexhexagintuple 67 is serial septenhexagintuple 68 is serial octohexagintuple 69 is serial novenhexagintuple 70 is serial heptagintuple 71 is serial unheptagintuple 72 is serial biheptagintuple 73 is serial triheptagintuple 74 is serial quattrheptagintuple 75 is serial quinheptagintuple 76 is serial sexheptagintuple 77 is serial septenheptagintuple 78 is serial octoheptagintuple 79 is serial novenheptagintuple 80 is serial octogintuple 81 is serial unoctogintuple 82 is serial biocogintuple 83 is serial triocogintuple 84 is serial quattriogintuple 85 is serial quinoctogintuple 86 is serial sexoctogintuple 87 is serial septenocogintuple 88 is serial octooctogintuple 89 is serial novenocogintuple 90 is serial nonagintuple 91 is serial unnonagintuple 92 is serial binonagintuple 93 is serial trinonagintuple 94 is serial quattrnonagintuple 95 is serial quinnonagintuple 96 is serial sexnonagintuple 97 is serial septennonagintuple 98 is serial octononagintuple 99 is serial novennonagintuple 100 is serial centuple 101 is serial uncentuple 102 is serial bicentuple 103 is serial tricentuple 104 is serial quattrcentuple 105 is serial quincenuple 106 is serial sexcentuple 107 is serial septencentuple 108 is serial octocentuple 109 is serial novencentuple 110 is serial miluple 111 is serial unmiluple 112 is serial bimiluple 113 is serial trimiluple 114 is serial quattrmiluple 115 is serial quinquuple 116 is serial sexmiluple 117 is serial septenmiluple 118 is serial octomiluple 119 is serial novemiluple 120 is serial decuple 121 is serial undecuple 122 is serial duodecuple 123 is serial tredecuple 124 is serial quattuordecuple 125 is serial quindecuple 126 is serial sexdecuple 127 is serial septendecuple 128 is serial octodecuple 129 is serial novendecuple 130 is serial vigintuple 131 is serial unvigintuple 132 is serial bivigintuple 133 is serial trivigintuple 134 is serial quadvigintuple 135 is serial quinvigintuple 136 is serial sexvigintuple 137 is serial septenvigintuple 138 is serial octovigintuple 139 is serial novenvigintuple 140 is serial trigintuple 141 is serial untrigintuple 142 is serial bistrigintuple 143 is serial tristrigintuple 144 is serial quatrstrigintuple 145 is serial quintrigintuple 146 is serial sextrigintuple 147 is serial septenstrigintuple 148 is serial octostrigintuple 149 is serial novenstrigintuple 150 is serial tetragintuple 151 is serial untetragintuple 152 is serial bitetragintuple 153 is serial tritetragintuple 154 is serial quattretagintuple 155 is serial quintetragintuple 156 is serial sextetragintuple 157 is serial septetragintuple 158 is serial octetragintuple 159 is serial novetragintuple 160 is serial pentagintuple 161 is serial unpentagintuple 162 is serial bipentagintuple 163 is serial tripentagintuple 164 is serial quattropentagintuple 165 is serial quinpentagintuple 166 is serial sexpentagintuple 167 is serial septempentagintuple 168 is serial octopentagintuple 169 is serial novempentagintuple 170 is serial hexagintuple 171 is serial unhexagintuple 172 is serial bihexagintuple 173 is serial trihexagintuple 174 is serial quattrhexagintuple 175 is serial quinhexagintuple 176 is serial sexhexagintuple 177 is serial septenhexagintuple 178 is serial octohexagintuple 179 is serial novenhexagintuple 180 is serial heptagintuple 181 is serial unheptagintuple 182 is serial biheptagintuple 183 is serial triheptagintuple 184 is serial quattrheptagintuple 185 is serial quinheptagintuple 186 is serial sexheptagintuple 187 is serial septenheptagintuple 188 is serial octoheptagintuple 189 is serial novenheptagintuple 190 is serial octogintuple 191 is serial unoctogintuple 192 is serial biocogintuple 193 is serial triocogintuple 194 is serial quattriogintuple 195 is serial quinoctogintuple 196 is serial sexoctogintuple 197 is serial septenocogintuple 198 is serial octooctogintuple 199 is serial novenocogintuple 200 is serial nonagintuple 201 is serial unnonagintuple 202 is serial binonagintuple 203 is serial trinonagintuple 204 is serial quattrnonagintuple 205 is serial quinnonagintuple 206 is serial sexnonagintuple 207 is serial septennonagintuple 208 is serial octononagintuple 209 is serial novennonagintuple 210 is serial centuple 211 is serial uncentuple 212 is serial bicentuple 213 is serial tricentuple 214 is serial quattrcentuple 215 is serial quincenuple 216 is serial sexcentuple 217 is serial septencentuple 218 is serial octocentuple 219 is serial novencentuple 220 is serial miluple 221 is serial unmiluple 222 is serial bimiluple 223 is serial trimiluple 224 is serial quattrmiluple 225 is serial quinquuple 226 is serial sexmiluple 227 is serial septenmiluple 228 is serial octomiluple 229 is serial novemiluple 230 is serial decuple 231 is serial undecuple 232 is serial duodecuple 233 is serial tredecuple 234 is serial quattuordecuple 235 is serial quindecuple 236 is serial sexdecuple 237 is serial septendecuple 238 is serial octodecuple 239 is serial novendecuple 240 is serial vigintuple 241 is serial unvigintuple 242 is serial bivigintuple 243 is serial trivigintuple 244 is serial quadvigintuple 245 is serial quinvigintuple 246 is serial sexvigintuple 247 is serial septenvigintuple 248 is serial octovigintuple 249 is serial novenvigintuple 250 is serial trigintuple 251 is serial untrigintuple 252 is serial bistrigintuple 253 is serial tristrigintuple 254 is serial quatrstrigintuple 255 is serial quintrigintuple 256 is serial sextrigintuple 257 is serial septenstrigintuple 258 is serial octostrigintuple 259 is serial novenstrigintuple 260 is serial tetragintuple 261 is serial untetragintuple 262 is serial bitetragintuple 263 is serial tritetragintuple 264 is serial quattretagintuple 265 is serial quintetragintuple 266 is serial sextetragintuple 267 is serial septetragintuple 268 is serial octetragintuple 269 is serial novetragintuple 270 is serial pentagintuple 271 is serial unpentagintuple 272 is serial bipentagintuple 273 is serial tripentagintuple 274 is serial quattropentagintuple 275 is serial quinpentagintuple 276 is serial sexpentagintuple 277 is serial septempentagintuple 278 is serial octopentagintuple 279 is serial novempentagintuple 280 is serial hexagintuple 281 is serial unhexagintuple 282 is serial bihexagintuple 283 is serial trihexagintuple 284 is serial quattrhexagintuple 	

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TYPE OF GEAR	HELICAL
Nº OF TEETH	153
MODULE	0.8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE S
REFERENCE CIRCLE DIA	126.718
HAND	R. H.
LEAD	1436.97
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	93.16
DRG Nº OF MATING GEAR	3274-170
ADDENDUM MOD COEFF	NIL
BACKLASH	
PRESSURE ANGLE	20°

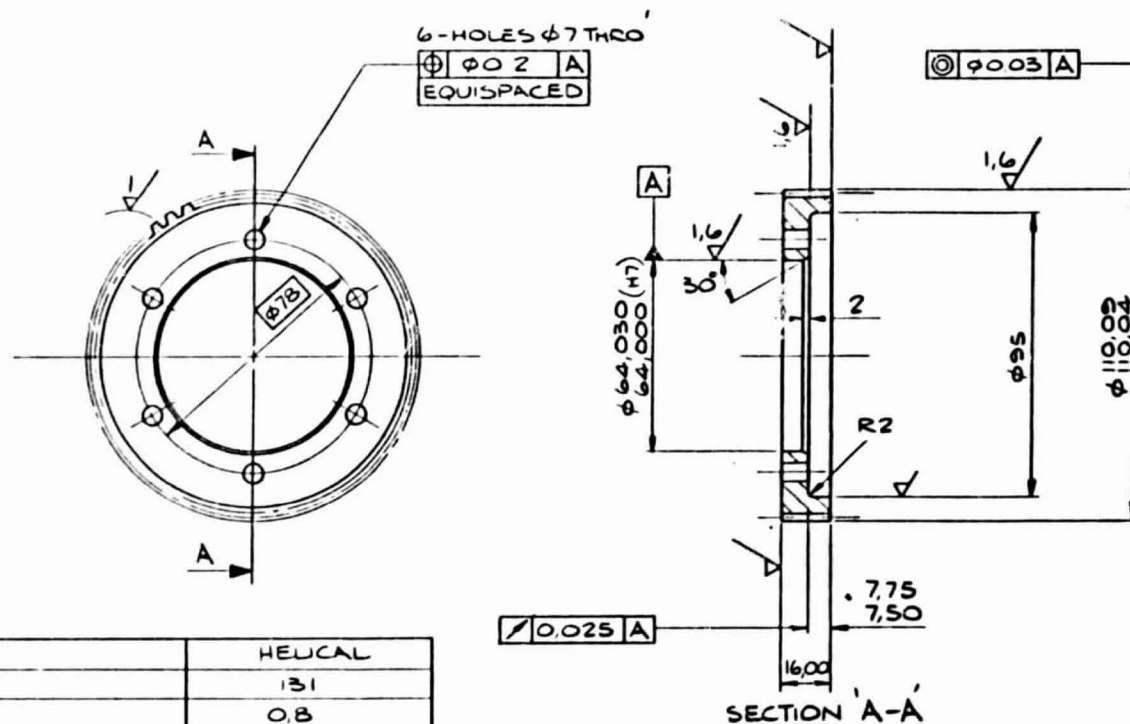


SECTION A-A

REMOVE ALL BURRS & SHARP EDGES

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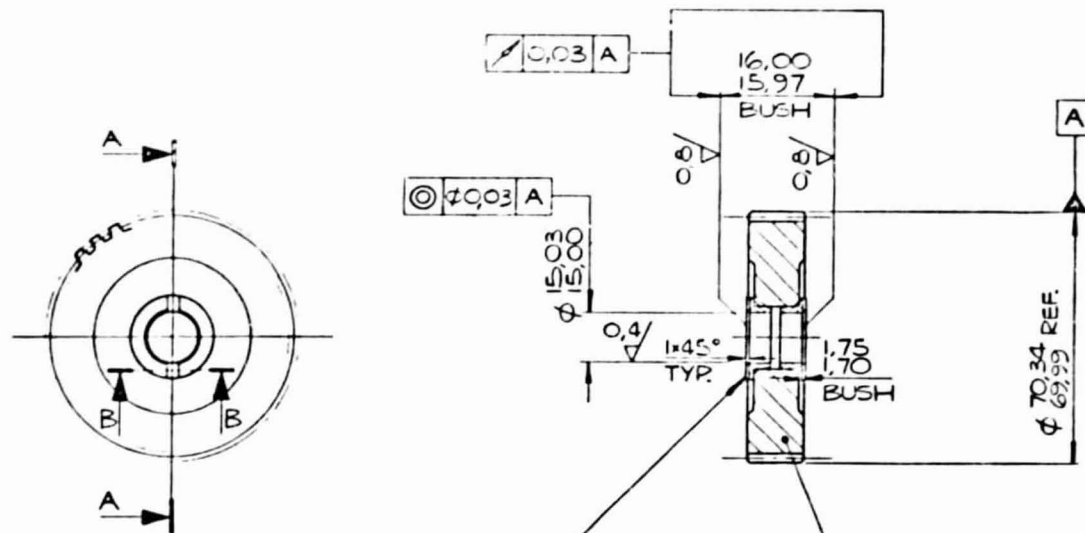
3274-172	
1. IN OTHER DEPT 2. IN OTHER DEPT 3. IN OTHER DEPT	0.25
4. IN OTHER DEPT	0.25
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97. IN OTHER DEPT	0.25
98. IN OTHER DEPT	0.25
99. IN OTHER DEPT	0.25
100. IN OTHER DEPT	0.25



TYPE OF GEAR	HELICAL
N° OF TEETH	31
MODULE	0.8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE DIA	108.497
HAND	RH
LEAD	1274.55
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	88.62
DRG N° OF MATING GEAR	61171 (3274-171)
ADDENDUM MOD COEFF	NIL
BACKLASH	
PRESSURE ANGLE	20°

Do a small angle		3274-173	
3274-173		3274-173	
ISO		A DEAN (W)	
TUFNOL - CARP BRAND		111	
HELICAL WATER PUMP GEAR		111	
31-TEETH (3600 REV/MIN)		2-61173	

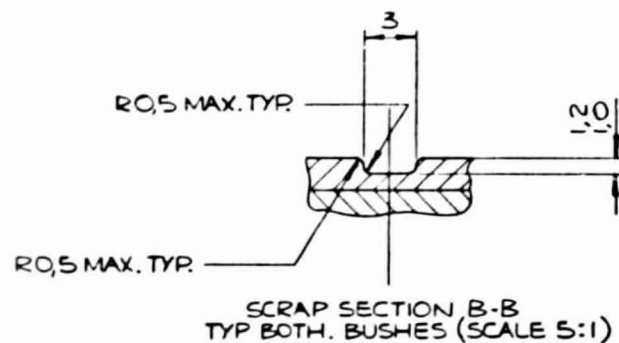
ORIGINAL PAGE IS
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BUSH 2-OFF
PT. NO. 61140
(3274-140)

IDLER GEAR
PT. NO. 61171 (3274-171)

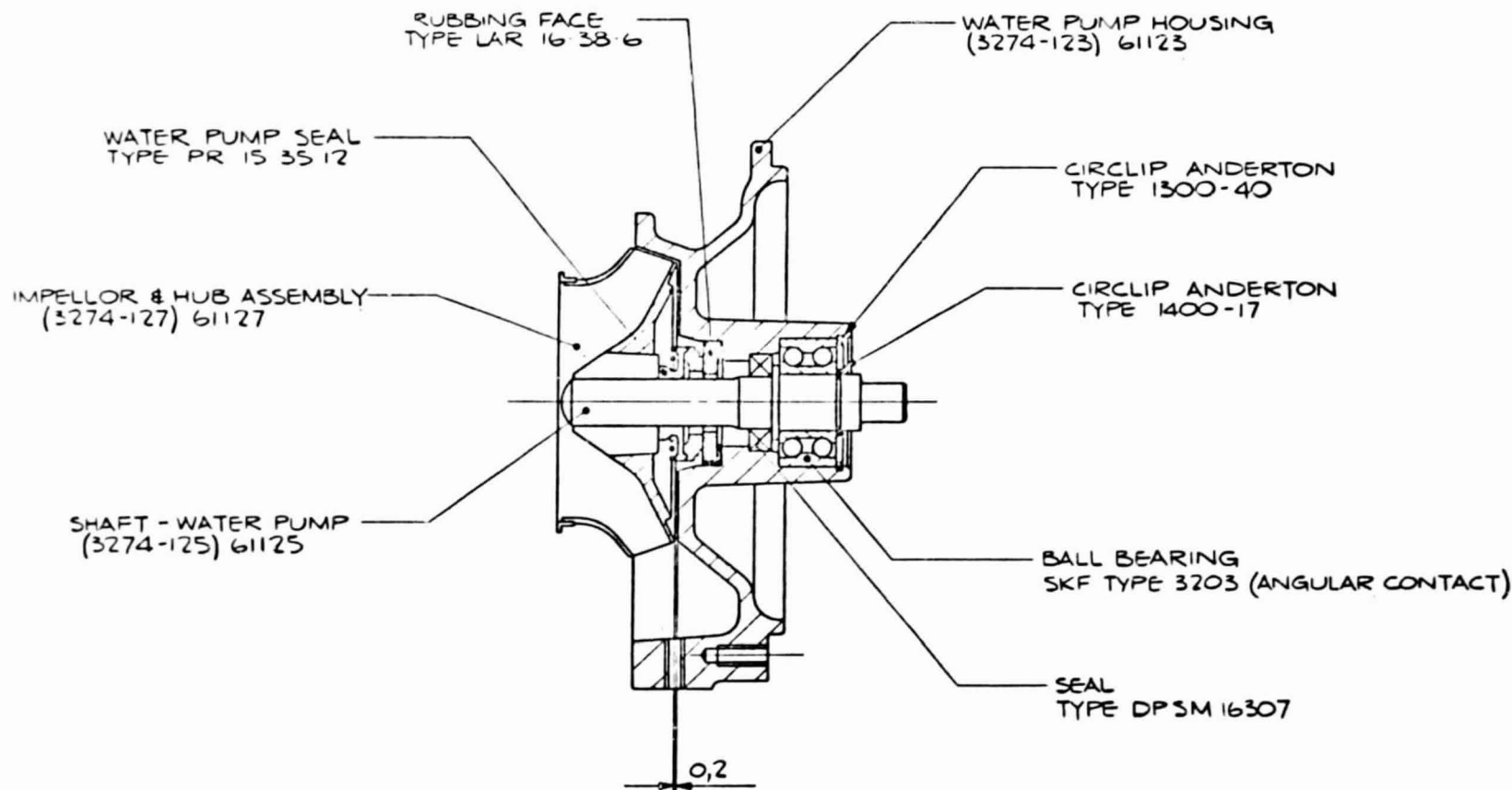
SECTION A-A



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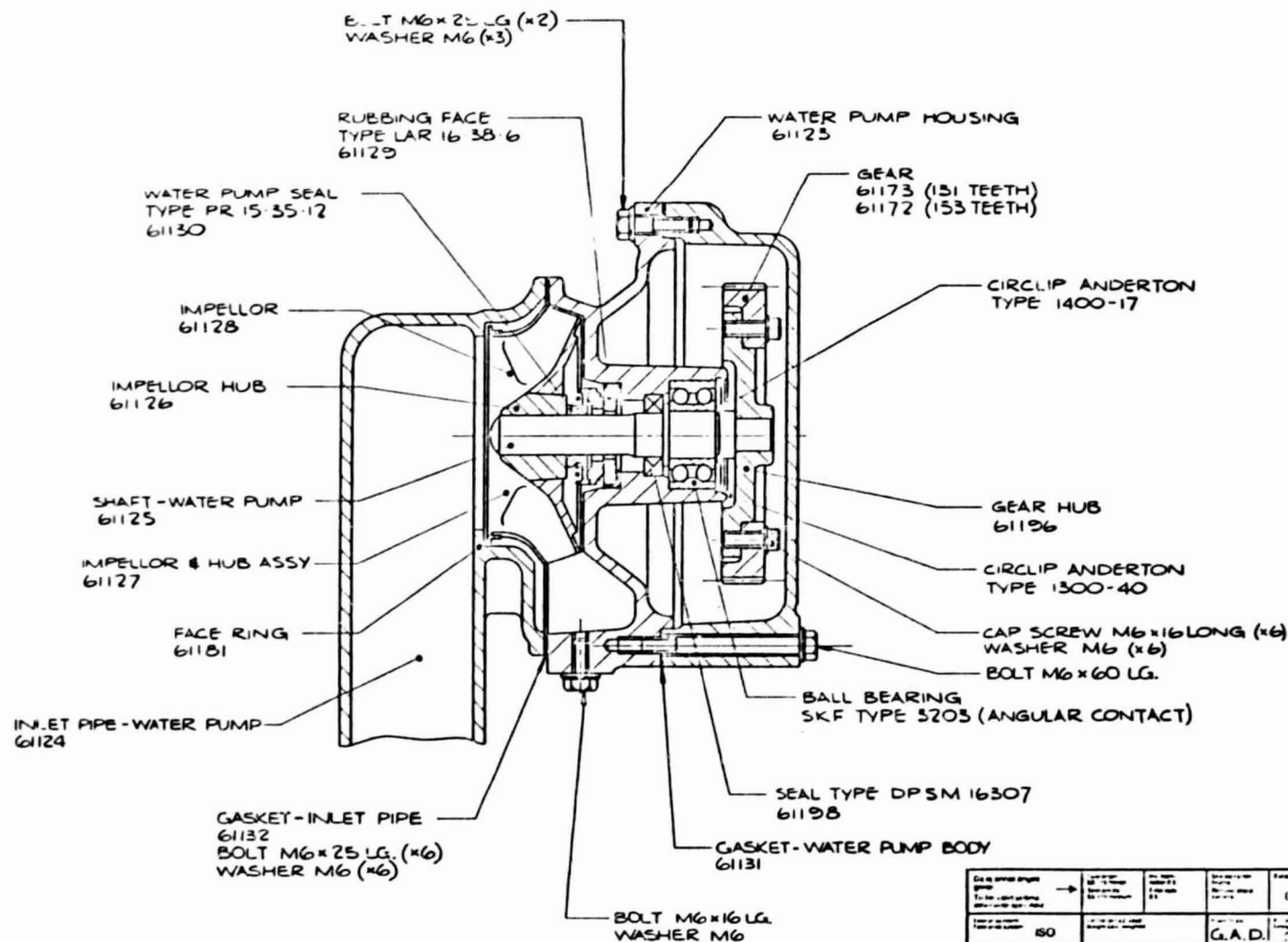
		3274-174	
Do in serial angles gear To be used unless otherwise specified	ISO	Design DJW	Scale 1:1
UNITED STIRLING ENGINEERING		ASSEMBLY - IDLER GEAR / BUSHES	
		2-61174	

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111-255

3274-182					
Drawn and checked To the valid drawing (if not valid, see note)	Date of issue 15.11.82	Date of revision 15.11.82	Date of revision 15.11.82	Date of revision 15.11.82	Date of revision 15.11.82
Type of drawing Technical drawing	ISO	G.T.	247	1:1	1:1
WATER PUMP ASSY.			1/1	A	2-61182

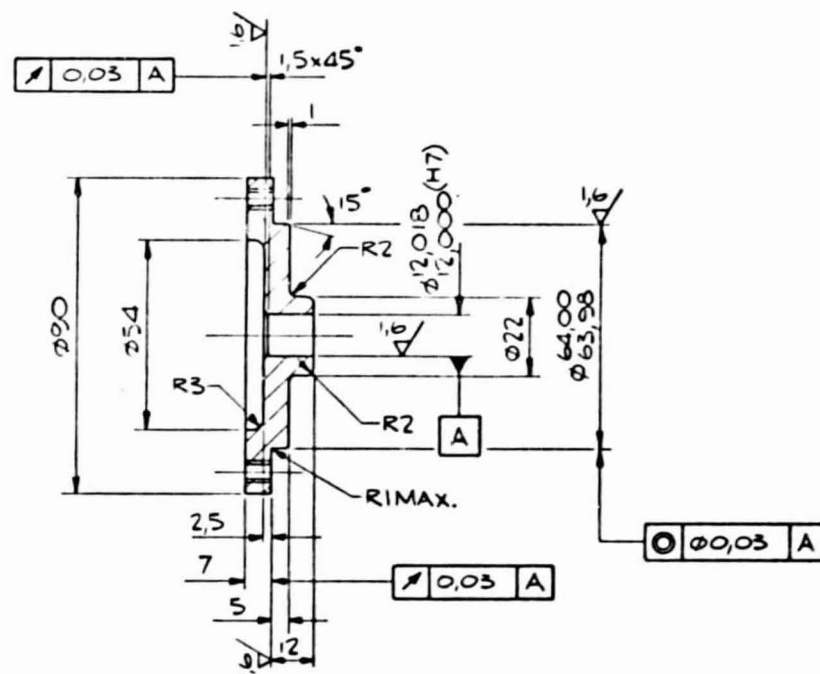
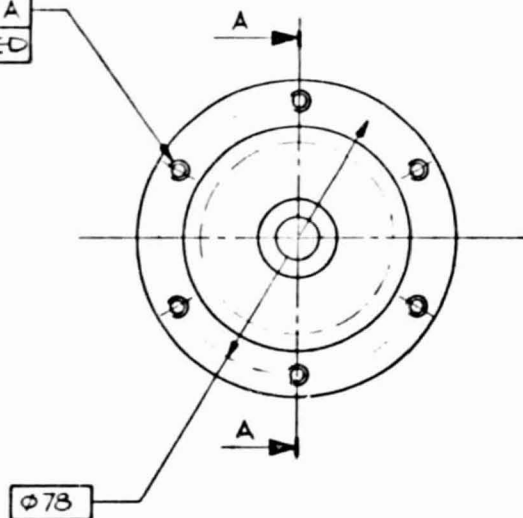


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3274-194	
G.D. 10 1000 1000 T.O. 10 1000 1000 10 1000 1000	10 1000 1000 10 1000 1000 10 1000 1000
ISO	G.A.D.
UNITED STIRLING (S.A.) LTD.	PARTS LIST DRG WATER PUMP ASSY. 2-61194

6 HOLES M5x1,0-6H THRO'

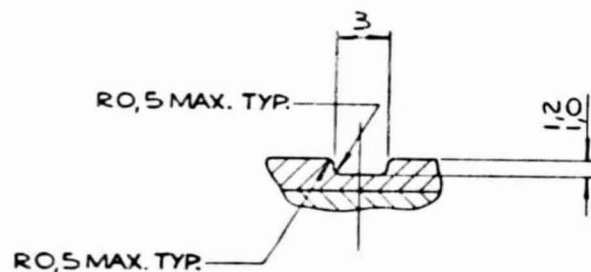
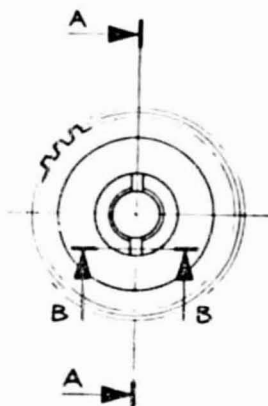
Φ	$\neq 0,2$	A
EQUISPACED		



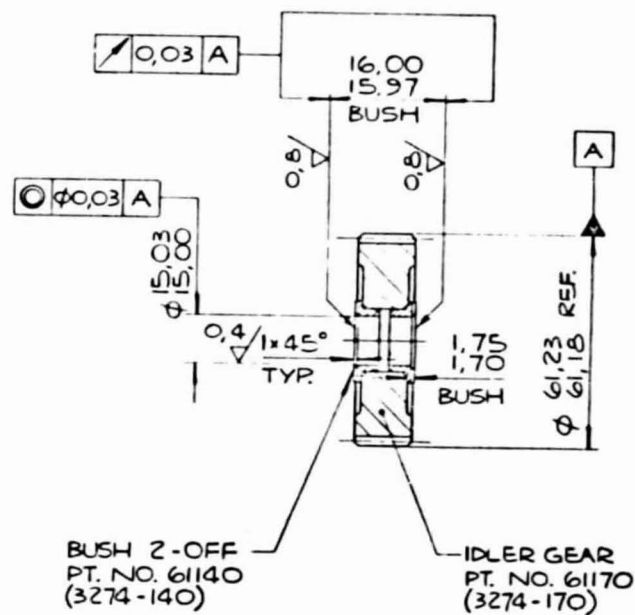
SECTION A-A

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Do in print any queries →				Checked by Signature 		Date 		No. of 	
ISO		G.T.		Date		No. of		No. of	
		STEEL BS 570 PT 2 1971 220 MO7 (ENIA)		1:1		1:1		A	
WATER PUMP DRIVE HUB		2-61196		2-61196		2-61196		2-61196	



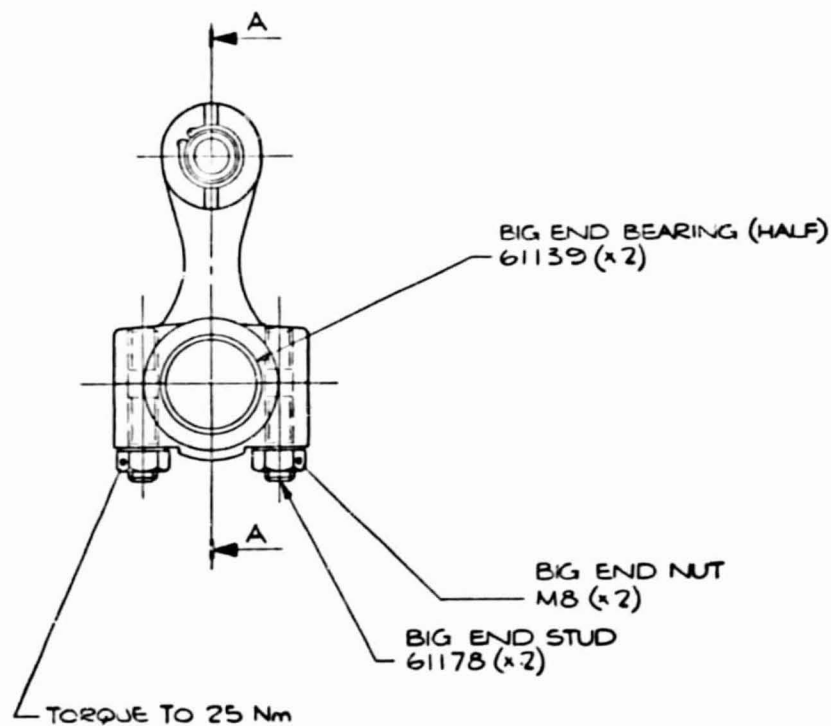
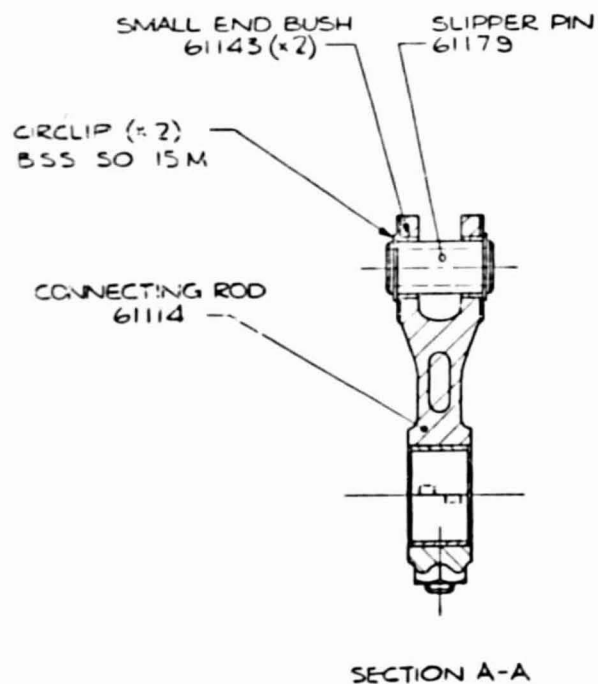
SCRAP SECTION B-B
TYP. BOTH BUSHES (SCALE 5:1)




SECTION A-A

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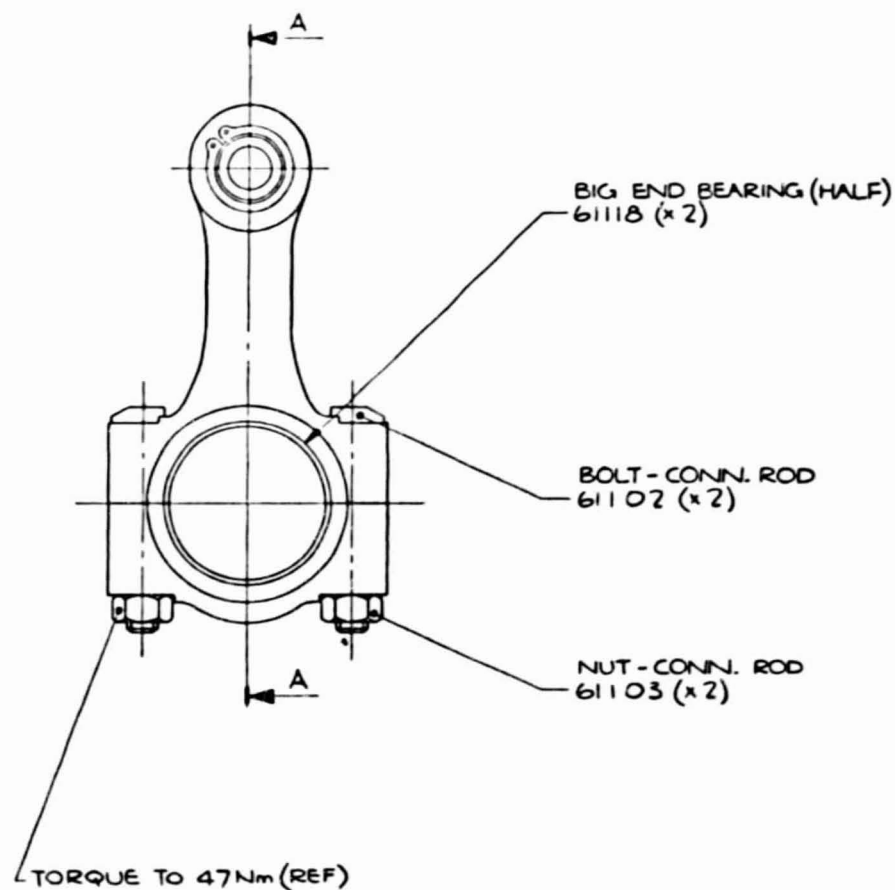
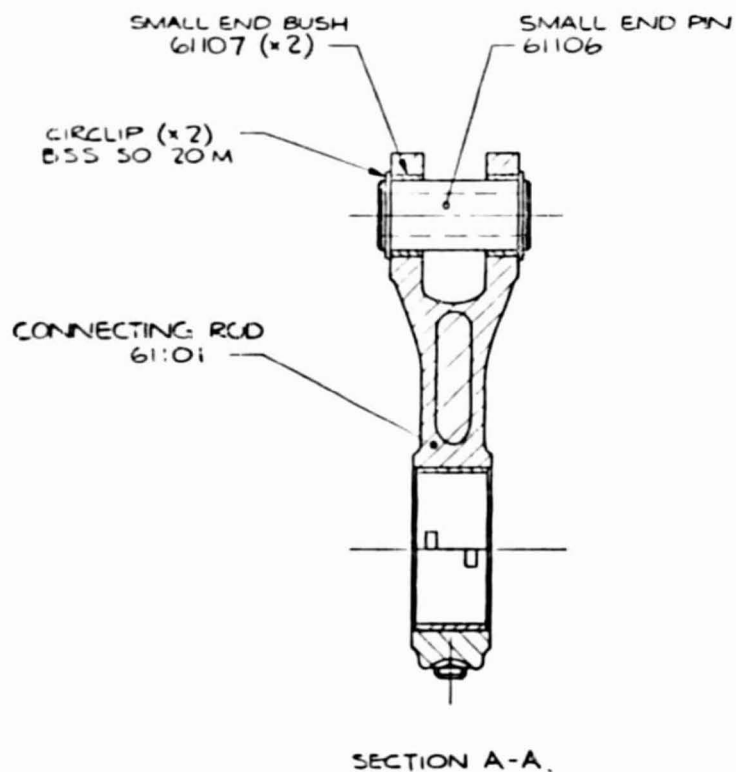
3274-197	
Drawn by: Checked by: Date: Scale: Unit: Material: Finish: Notes: ISO DW. 1:1, 1:5 1:1 2-61197	ASSEMBLY - IDLER GEAR / BUSHES



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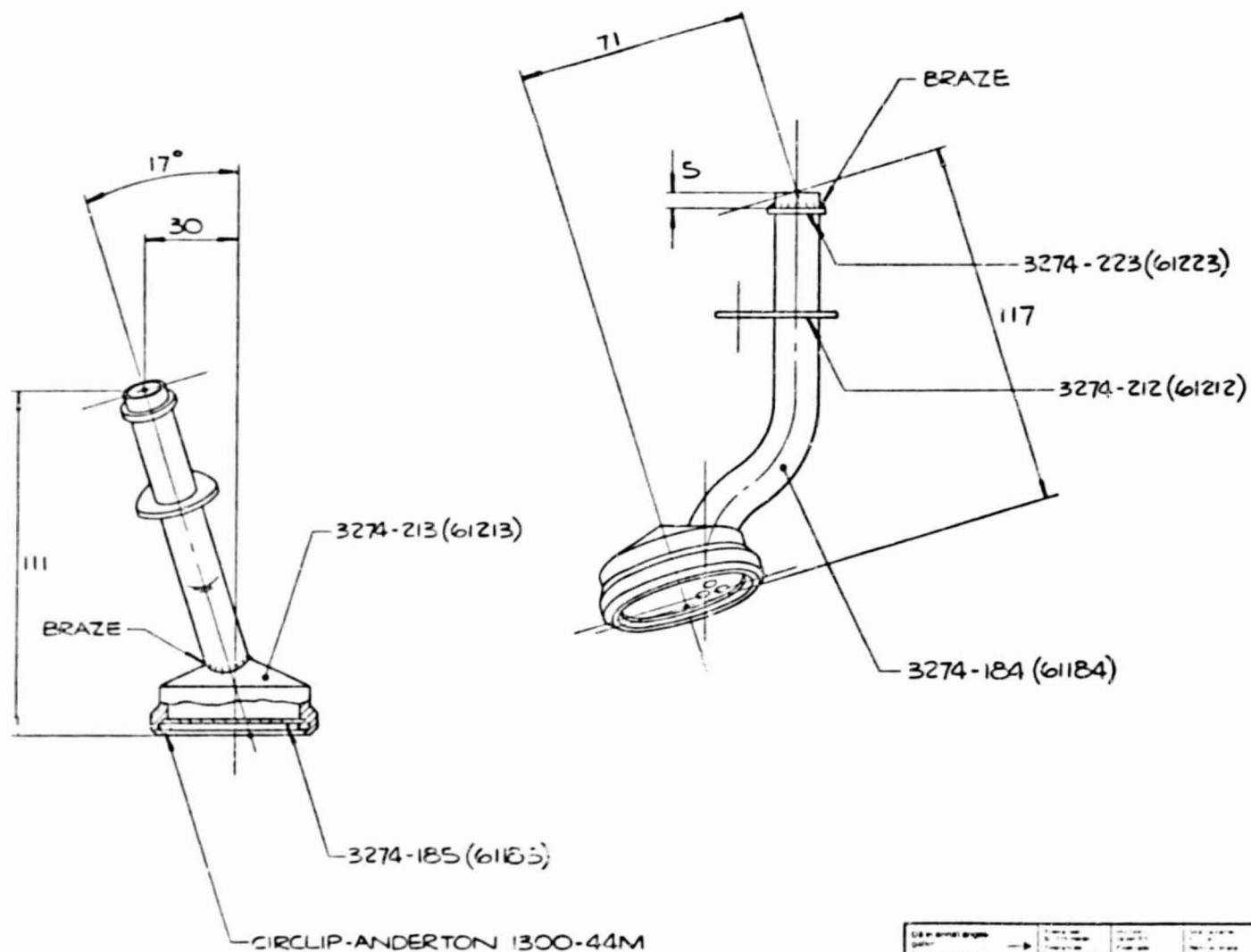
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ISO	G.T.	1:1	1:1	1:1	1:1
 ROMANOVSKAYA UNITED STIRLING (SARL) A. H. & Co.			PARTS LIST FOR HYDROGEN PUMP ASSY. CONNECTING ROD PARTS		
			2-61200		

111-260




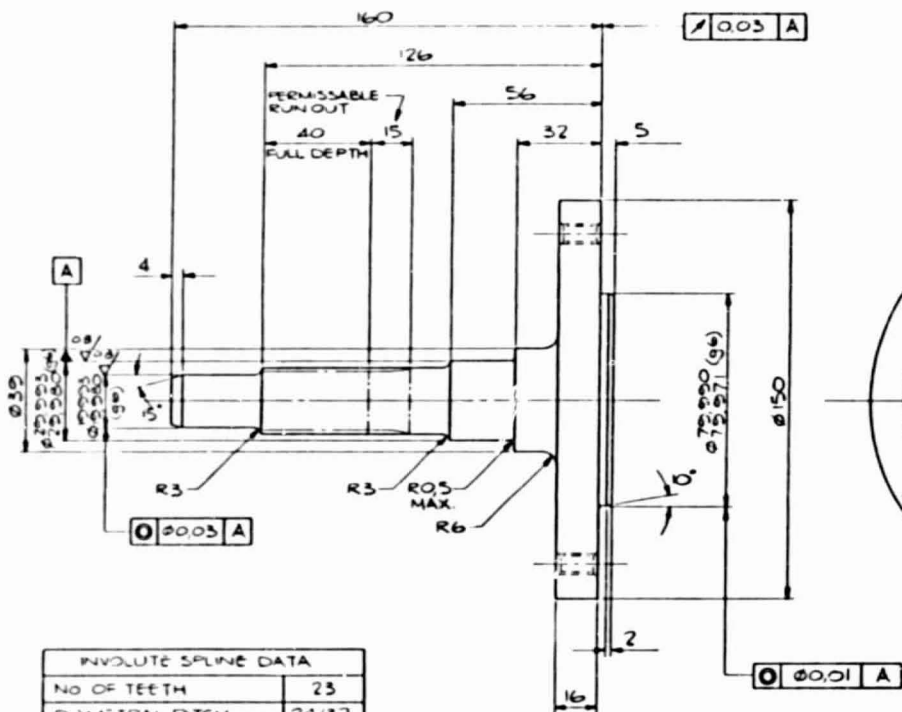
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3274-211							
USE IN SERIALS PARTS	<table border="1"> <tr> <td>DATE</td> <td>BY</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	DATE	BY	REVISION			
DATE	BY	REVISION					
ISO	<table border="1"> <tr> <td>DATE</td> <td>BY</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	DATE	BY	REVISION			
DATE	BY	REVISION					
 UNITED STIRLING (SHEETS) AND B. CO.	<table border="1"> <tr> <td>DATE</td> <td>BY</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	DATE	BY	REVISION			
DATE	BY	REVISION					
OIL STRAINER ASSY.							
2-61211							



6 HOLES M8x1.25-6H THRO' CSK 50° TO REMOVE FIRST THREE EQUISPACED (BOTH SIDES)
 ± 0.025 A

INVOLUTE SPLINE DATA	
NO OF TEETH	23
DIAMETRAL PITCH	24/32
TYPE OF ROOT	FLAT SIDE FIT
PRESSURE ANGLE	50°
BASE DIAMETER (REF)	21.079
ALLOWABLE PROFILE ERROR FROM PITCH LINE	-0.0254

ACTUAL CIRCULAR THICKNESS (MIS) (1.557mm)
 EFFECTIVE CIRCULAR THICKNESS ALLOWING FOR MANUFACTURING ERRORS TO BE
 0.624" - 0.644" (1.585 - 1.636 mm)

R.014 REF - (35G)

DETAIL OF SPLINE
 SCALE 2:1

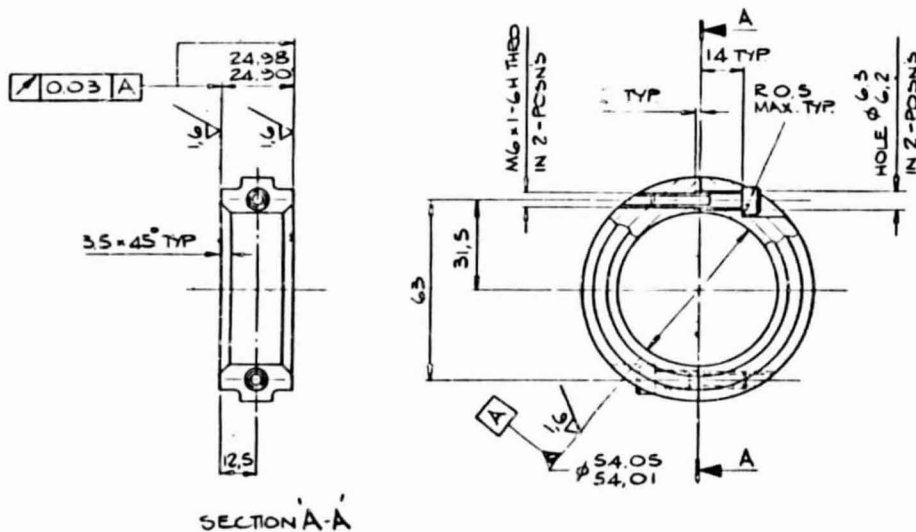
EFF CIRCULAR THICKNESS

MACHINE 32/ UNLESS OTHERWISE STATED

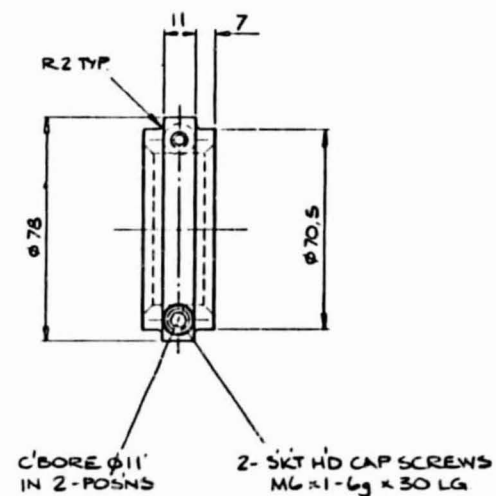
1.0004" MAJOR DIA (25.410 mm)
 1.0034" MAJOR DIA (25.486 mm)
 .5585" PCD REF (24.341 mm)

3274-220	
DR. & DATE 50 1.025 G.T. C.M.A. STEEL 60SM36 83370-1970 (EN16) COUPLING SHAFT 2-61220	32 1:1 1/1 A

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NOTE
 ASSEMBLED WEIGHT TO BE
 374 GRAMS \pm 10 GRAMS.
 O/DIA. TO BE ADJUSTED IF NECESSARY.

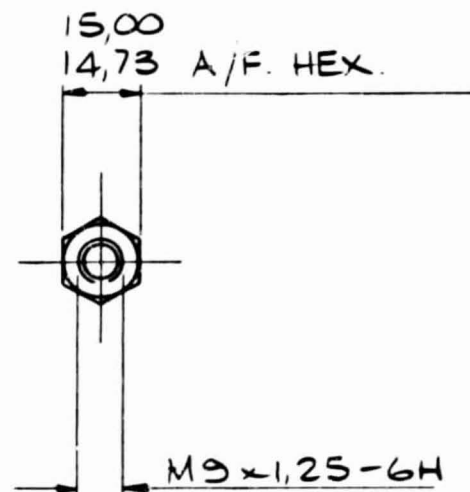
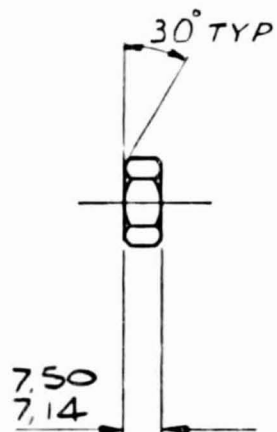


32/
 UNLESS STATED OTHERWISE

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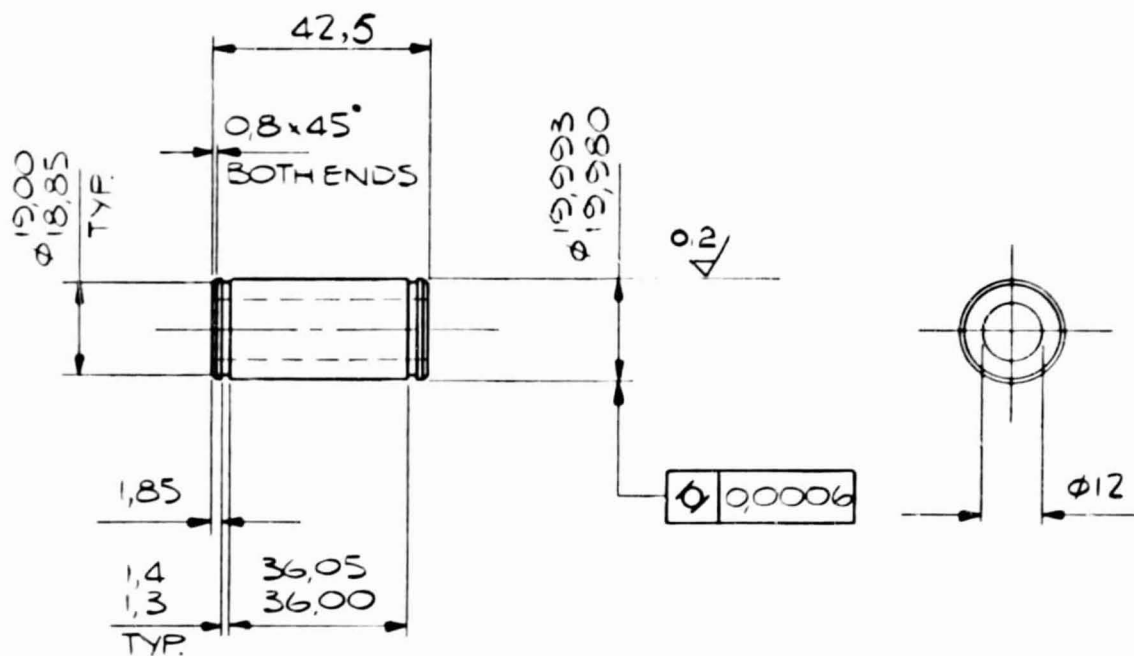
3274-224			
ISO	STEEL B5570 220M07 (EN1A)	111	A
LINK WEIGHT - ASSY	2-61224		

[illegible]



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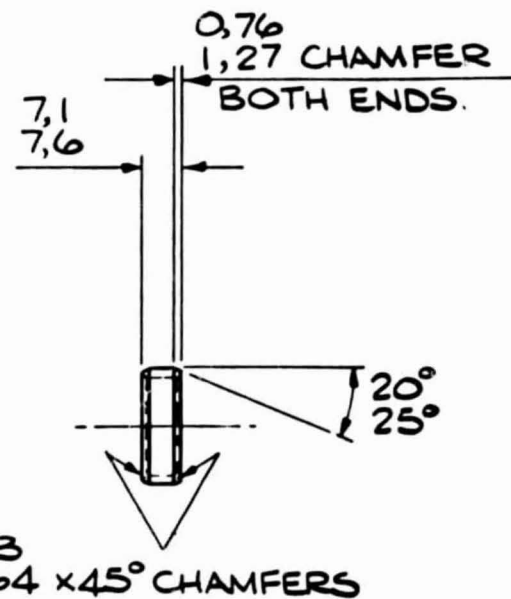
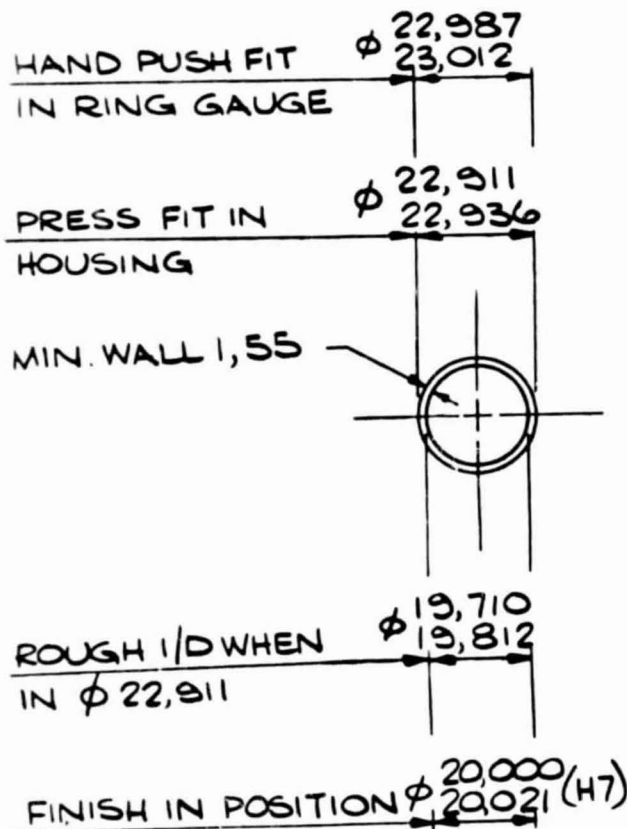
Material/Ämne STEEL GRADE 12 TO BS 3692				Vikt. ber./vikt. Toleranssystem enl ISO		3274-103	
Först ADEAN				Konstr. gr. <i>vedp</i>		Där ej annat anges gäller:	
Prod. gr.				Godk. för tillv. <i>24.11.79</i>		Vikt i gånge utv. 8 g m. 8 m	
För m. toleranssatta mät. SMS 715 Medel				Skarpa kanter brutna		Tjocklekhet i Ås Max. µm	
Ersätter				Skala 1:1		Radier i mm höjst 0.5	
Beräkning				Ersatt av		Grupp	
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co				CONNECTING ROD - NUT		361103	
						A	



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CASE HARDEN & GRIND O/D ONLY. HARDNESS
60 RC MIN DEPTH OF HARDNESS 0,7-0,5
MACHINE $3.2/\sqrt{\quad}$ UNLESS SHOWN OTHERWISE

						3274-106	
Da ej annat anges gäller To be valid unless otherwise specified	→	Toleranser SS 715 medel Tolerances SS 715 medium	Min. höjd radier 0.5 Fillet radi 0.5	Skärpa vinklar Drutis Remove sharp corners	Enkel gräns 	Yttext Surface roughness Ra µ max	
Toleranssystem Tolerance system	ISO	värdet beräknat enligt Weight calc. weighed		Risad Dragen G.T.	Konstr. gr. Design checked W.A.	Prövd gr. Prod. checked Godk. Approven	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material STEEL 080M13 (EN32C)				Skala Scale 1:1	Grupp Group
		Ersätter Replaces		Ersätts av Replaced by		Blad nr. and Sheet no. total 1/1	Inständ Rev. letter A
		Titel SLIPPER PISTON PIN				Rita nr Drawing no	
						3-61106	



PRESS FIT :- 0,051-0,102
FINISHING ALLOWANCE :- 0,183-0,343




VANDERVELL PRODUCTS LTD
DRG No L9308-1.

Material/Access				Qty. for/Aspl		3274-107	
VP1				Tolerances/Spec. and. ISO		Dir. of anast angles given	
Rev.	Rev. of	Prod. gr.	Spec. No. etc.	For all information refer: DRG 710 Sheet	Shaper handle Insulin	Shaper (1/2) Pilot 6.5	
G.T.	5-11-79			Scale	Grading	Gr. with or	
KONMANTBOLAGET UNITED STIRLING (SWEDEN) AB & Co				Drawing BUSH - SMALL END - PISTON ROD		3-61107	
						A	

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Issuing Rev letter	And to Rev no	Page Position	Receiving Description	Date Date	Sign	Good Approve
	13					

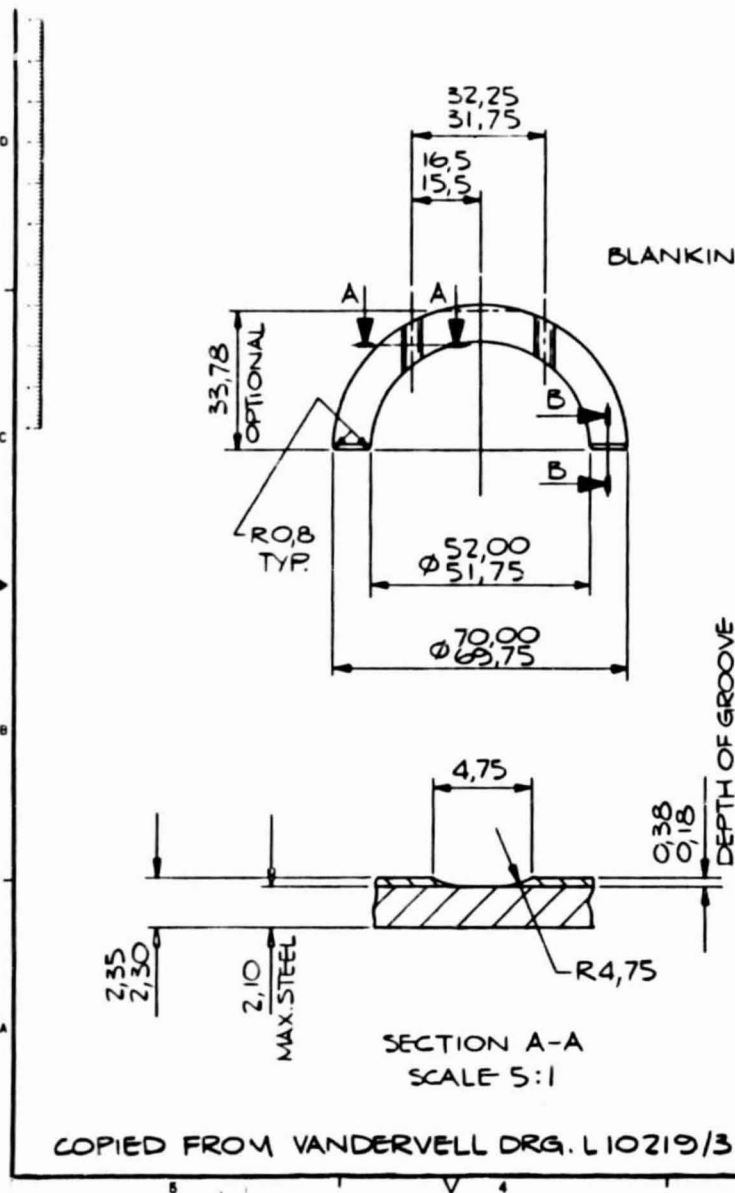
Då ej annat anges gäller: → To be used unless other are specified:	Tolerances H8 f7 JS medium H8 f7 JS medium	Min. toler- nces 9 & 9 class 9.5	Sharps limits grading Running sharp corners	Europ. pres. 	Tightness Surface roughness Ra μm
Tech. inspection tolerance system ISO	Vol. for toler- nces Weight Weight (G)/Weight	Heat/Treated G.T.	Limit of Design (mm) 	Prod. pr. Prod. Standard	Qual. / Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material VP19	Grindin / Regrindin	Grind in / Regrind in by	Shape / Size 1:1	Group / Group 1/1 A
Title MAIN BEARING	Part no. / Drawing no. 3-61109				

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For use only in the design of the product shown on this drawing.



Location	Area or	Leg	Recessing	Depth	Angle	Size
	2					

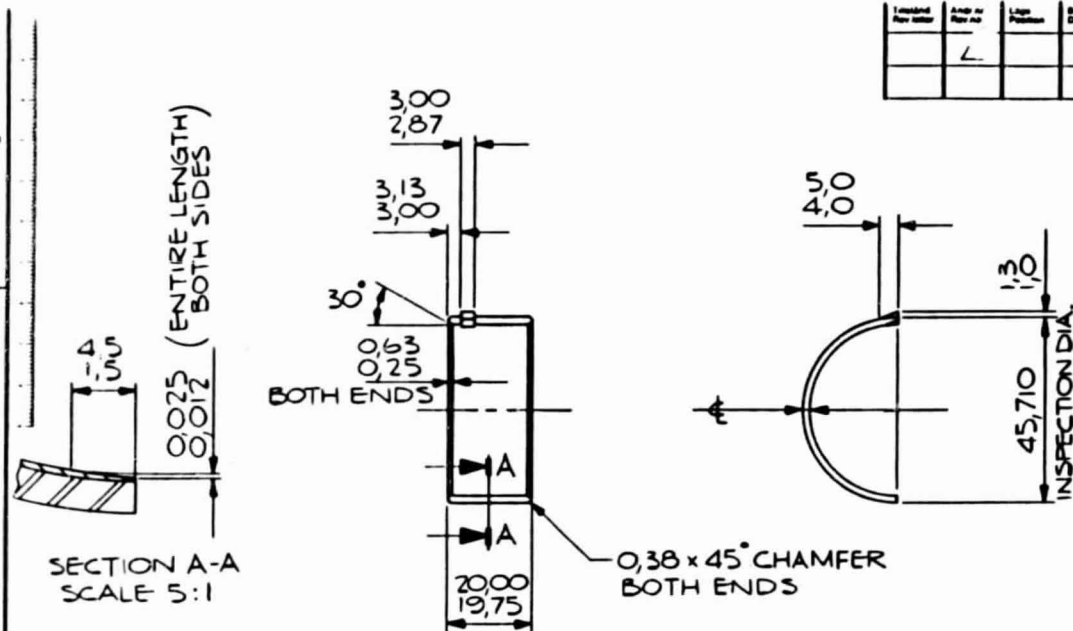
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					3274-110	
Då ej annat anges giltar → To be valid unless otherwise specified	Tolerance SB 715 master SB 715 maximum	per item radius 0,5 fillet radii 0,5	Shape factor radius fillet radii 0,5	Europ. spec. 	Technical Surface roughness Ra μ max	
Tolerance system International system ISO	Yes for standard weight Height limit weight	Round/Drawn G.T.	Length of fillet radii WIP	Part of Part of Part of	Each Approval	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material VP2			Scale/Scale 1:1	Group/Group	
	Erection/Placement		Erection/Placement by		Part of Part of Part of	Technical Part of Part of
	Test			Part of/Part of 1/1		
THRUST WASHER					Part of/Part of 3-61110	

ALL DIMENSIONS SHOWN
UNLESS OTHERWISE SPECIFIED
ARE IN MILLIMETERS (INCHES)
AND DECIMALS THEREOF (FRACTIONS)

CONSTRUCTION OF DIMENSIONS
AND TOLERANCES
SHOWN IN THIS DRAWING
SHOULD BE IN ACCORDANCE WITH
THE FOLLOWING STANDARDS:
ISO 2768-M
ISO 1101

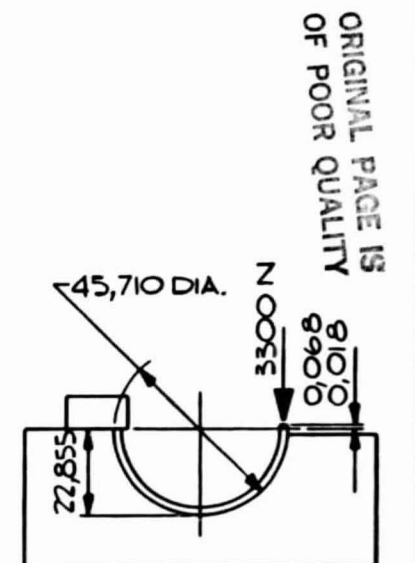
THIS DRAWING IS THE PROPERTY OF
KONMANTITBOLAGET
UNITED STIRLING
(SWEDEN) AB & Co



HOUSING DIA. 45,710
45,697
SHAFT DIA. 42,000
41,984
WALL AT ϕ 1,842
1,833
STEEL AT ϕ 1,60 MAX.
RUNNING CLEARANCE 0,060
0,013

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Material	Part No.	Part No.	Part No.	Part No.	Part No.
	L				

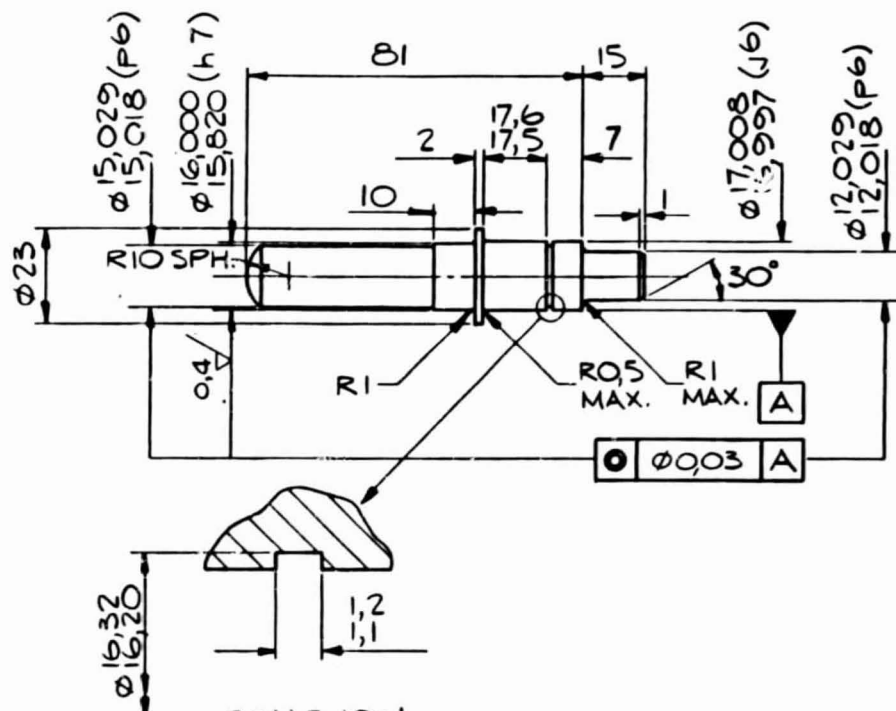


PARTING LINE PRESSURE
AND HEIGHT DETAILS

3274-118					
Dé et annel engas gâter: To be valid unless otherwise specified:	Tolerance BB 715 medium Tolerance BB 715 medium	Inv. Angle radius 0,5 Fillet radii 0,5	Sharp corner breaks Remove sharp corners	Surf. proc. E10	Tolerance Surface roughness Ra 3,2 max
Tolerance system Tolerance system	ISO	Yield strength Weight ratio/weight	Heat Treat G.T.	Prod. or Prod. method	Qual. / Approval
Material VP 2 C			Heat Treat G.T.	Prod. or Prod. method	Qual. / Approval
Grinder / Replacer			Grinder / Replacer	Prod. or Prod. method	Qual. / Approval
Test			Test	Prod. or Prod. method	Qual. / Approval
KONMANTITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			CON. ROD BEARING - POWER PISTON		
			3-61118		

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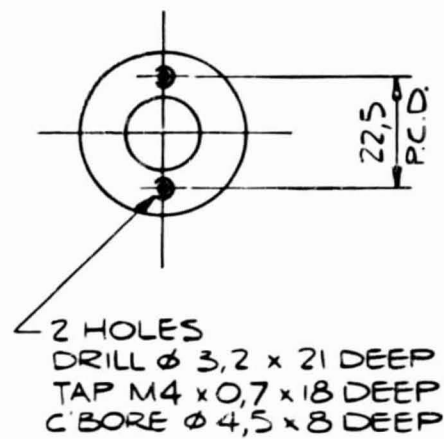
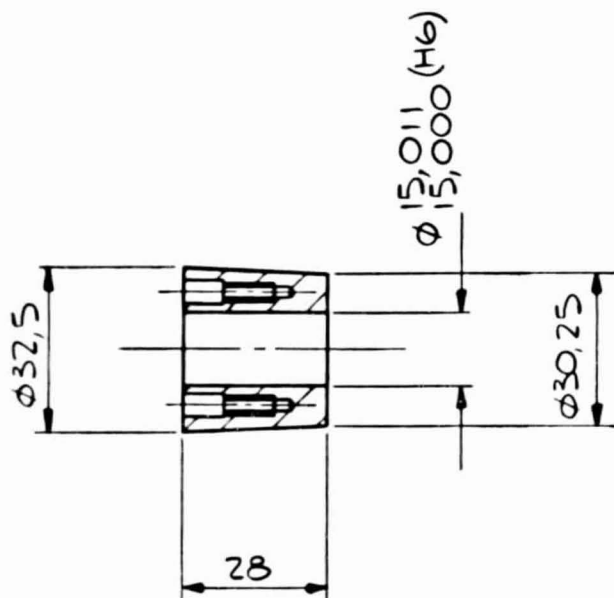
Approved Rev. letter	Issue Rev. letter	Issue Rev. letter	Issue Rev. letter	Date	Sign	Code
	Δ					



SCALE 10:1

MACHINE ALL OVER
EXCEPT WHERE
OTHERWISE SHOWN

Då ej annat anges gäller: To be valid unless otherwise specified		Toleranser SS 715 meller Toleranser SS 715 meller	Inv. toler. valör 9.5 I alla rikt. S.S.	Skarpa kanter Skarpa Rundna skarpa kanter	Surav pris ☉	3274-125	
Toleranssystem Tolerance system	ISO	Vald benämning valör meller valör meller	Material G.T.	Skala G.T.	Skala G.T.	Skala G.T.	Skala G.T.
Material STEEL S6 970 212 M 36 (ENB M) NORM. P		Skala 1:1		Skala 1:1		Skala 1:1	
Förberedare UNITED STIRLING (SWEDEN) AB & Co		Skala 1:1		Skala 1:1		Skala 1:1	
Titel SHAFT - WATER PUMP		Skala 1:1		Skala 1:1		Skala 1:1	
Förberedare UNITED STIRLING (SWEDEN) AB & Co		Skala 1:1		Skala 1:1		Skala 1:1	



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MACHINE $3,2/\sqrt{\text{ALL OVER}}$

3274-126

Da ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	 Skarpa kanter brutna Remove sharp corners 	Europ. prov 	Ytfinish Surface roughness $Ra \mu m$ $3,2/\sqrt{\text{ALL OVER}}$
Toleranssystem Tolerance system ISO	Vald beräknad, värd Weight calc. weighed	Rätt Dragen G.T.	Kontrollerat Design checked 	Prod. gr. Prod. checked Godk. / Approved
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STAINLESS STEEL	Ersätter / Replaces	Skala / Scale 1:1	Grupp / Group
	Titel HUB - WATER PUMP IMPELLER	Ersatt av / Replaced by	Blad nr. / Sheet no. total 1/1	Första Rev. / A
			Rit nr. / Drawing no. 3-61126	

BRAZE
4 POSITIONS

FACE RING
61181 (3274-181)

80,2
Ø 80,0

72,50
Ø 72,45

IMPELLER

70°

38,85
38,75

25

5,80
5,78

Ø 8

A

1,2

30°

HUB 61126 (3274-126)

IMPELLER 61128 (3274-128)

4

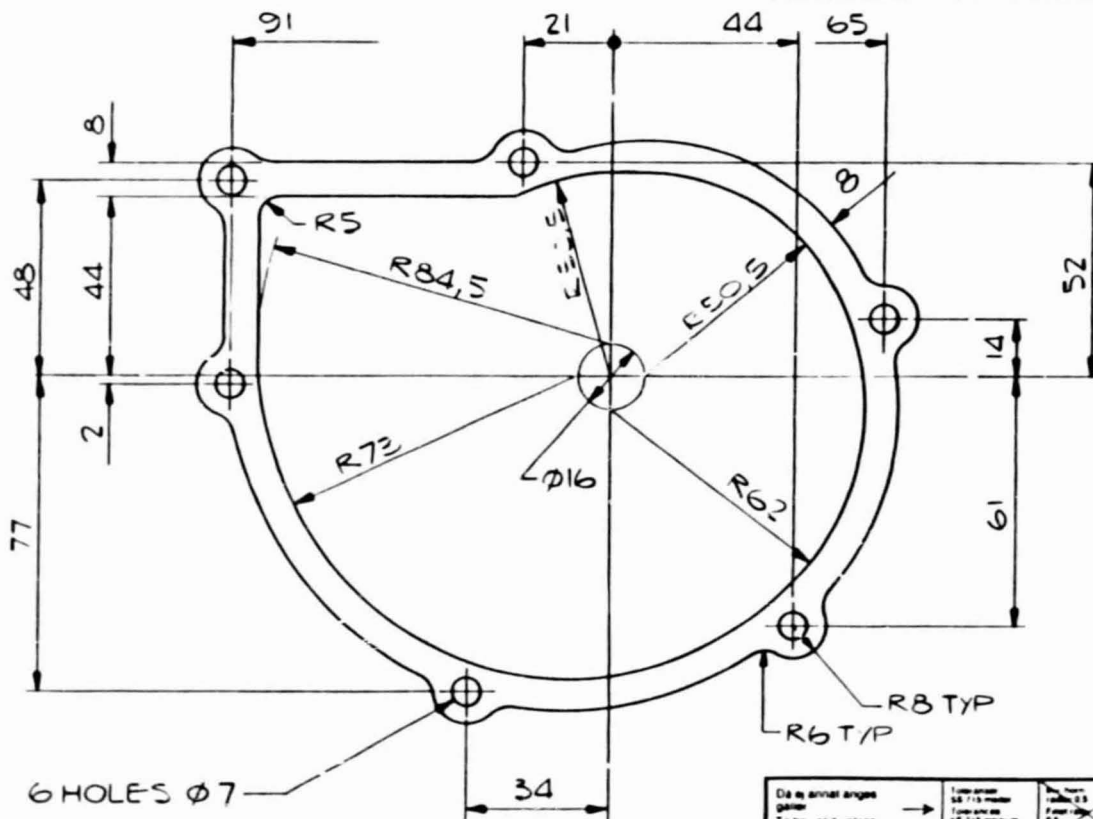
CHAMFER TO BLEND SMOOTHLY
WITH IMPELLER HUB

Ø 0,05 A

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Standard Part No.	Part No.	Part Name	Part Description	Part No.	Part No.	Part No.
	L					

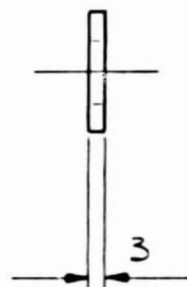
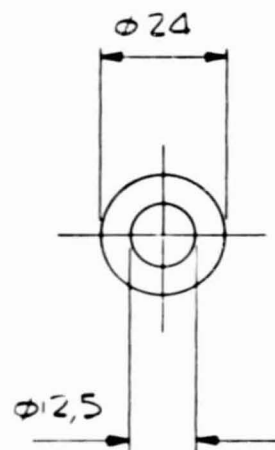
Då q annat anges gäller To be valid unless otherwise specified		Toleranser SE 718 meter Toleranser SE 718 meter ± 0,25	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter
Toleranssystem ISO		Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter
Material		Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter
Skruvar SE 718 meter SE 718 meter SE 718 meter		Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter	Skruvar SE 718 meter SE 718 meter SE 718 meter
KONMANTBOLAGET UNITED STIRLING (SWEDEN) AB & Co		IMPELLER/HUB ASSEMBLY		3274-127		3-61127	



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Issued Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.	Rev. No.
	1								

3274-132		3274-132	
Dia. of inlet angles gasket To be used unless otherwise specified	To be used unless otherwise specified 0,25	To be used unless otherwise specified 0,25	To be used unless otherwise specified 0,25
ISO	G.T.	G.T.	G.T.
COOPERS G90 0,25 THK	COOPERS G90 0,25 THK	COOPERS G90 0,25 THK	COOPERS G90 0,25 THK
GASKET - INLET PIPE	GASKET - INLET PIPE	GASKET - INLET PIPE	GASKET - INLET PIPE
1:1	1:1	1:1	1:1
3-61132	3-61132	3-61132	3-61132

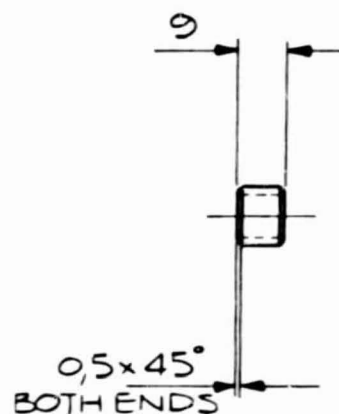
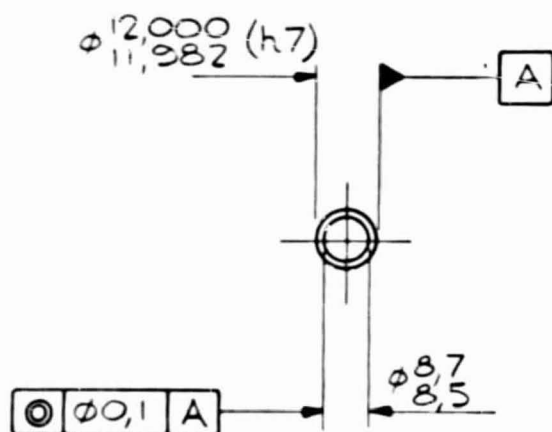


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CASE HARDEN TO 60 Rc MINIMUM x 0,7-0,5 DEEP

3274-134					
Da ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium	Små form rader 0,5 Filer rader 0,5	Skarpa vinklar brutna Remove sharp corners	Europeiskt ISO 9001	Ytfinish Surface roughness Ra μ max
Toleranssystem Tolerance system ISO	Vikt beräknad vägt Weight calc weighed	Risik Dragn G.T.	Rustskydd Design Checkered RWP	Princip Princ. Checkered	Ytfinish Ytfinish
 KOMMANDEBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL 080M15 (EN 32C)		Skala Skala 1:1		Ytfinish Ytfinish
	Ersätter Replaces		Ersätts av Replaced by		Ytfinish Ytfinish
	Titel WASHER - MAIN BEARING STUD		Ytfinish Ytfinish		Ytfinish Ytfinish
Rustskydd Rustskydd					Ytfinish Ytfinish
3-61134					Ytfinish Ytfinish

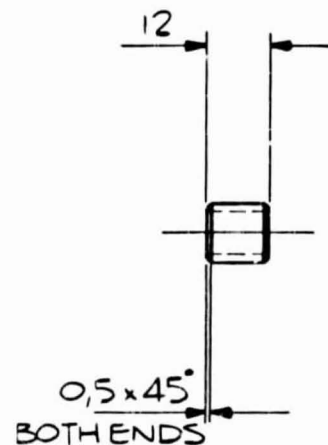
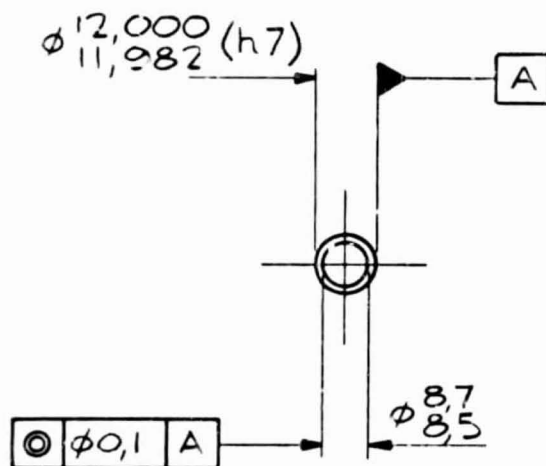
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111-276

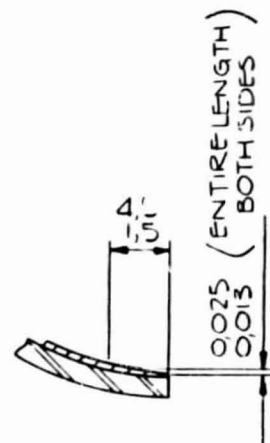
3274-136					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	Norm faller 0,5 Fallen 0,5	Skarpa hörn bruka Remove sharp corners	Europro 	Ytterm. Surface roughness Ra μ max 1,6/ A
	Toleranssystem Tolerance system ISO	Vikt beräknad, vägd Weight calc. weighed	Ritad G.T.	Kontrollerad Design checked KUL	Provgr Prod checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL BS 970 080M40(EN8)		Skala 1:1		Grupp Group
	Ersätter 		Ersätter 		Skala 1:1
	Titel DOWEL - CRANKCASE TO BEDPLATE		Skala 1:1		Grupp A
Rit nr 3-61136					3-61136

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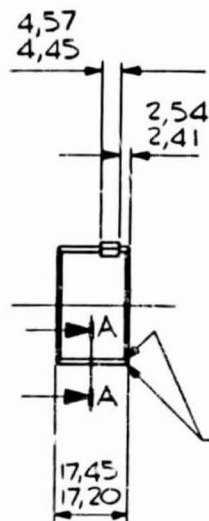


111-277

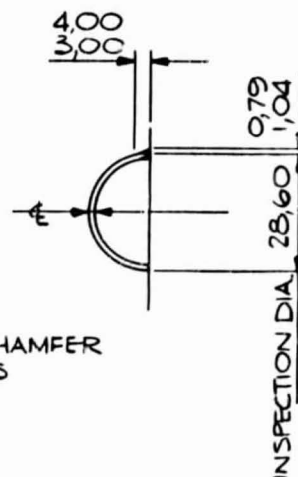
3274-137					
Då ej annat anges gäller. To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	hörn- radier 0,5 Fillet r. 0,5	Skarpa kanter brutna Remove sharp corners	Europ. prov 	Ygghet Surface roughness Ra μm max 1,6
Toleranssystem Tolerance system ISO	Vikt beräknad: vägd Weight calc: weighed	Risat/Drawn G.T.	Konstr. gr. Design checked CNP	Prod. gr. Prod. checked	Godk. Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL BS 970 080M40 (EN8)		Skala/Scale 1:1		Grupp/Group
	Ersätter/Replaces		Ersatt av/Replaced by		Blad nr./ent Sheet no./total 1/1
	Titel DOWEL-INTERCASING		Tillstånd Rev. letter A		Rev. nr./Drawing no. 3-61137



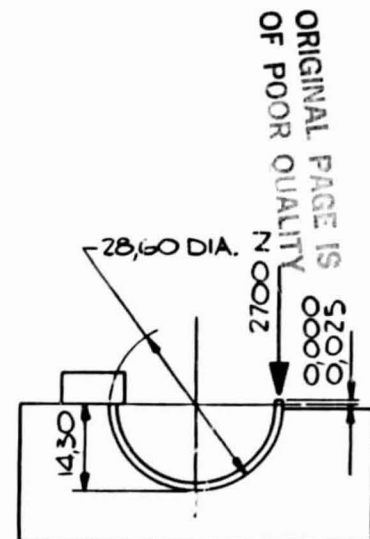
SECTION A-A
SCALE 5:1



0.64
0.13 x 45° CHAMFER
BOTH ENDS



INSPECTION DIA.



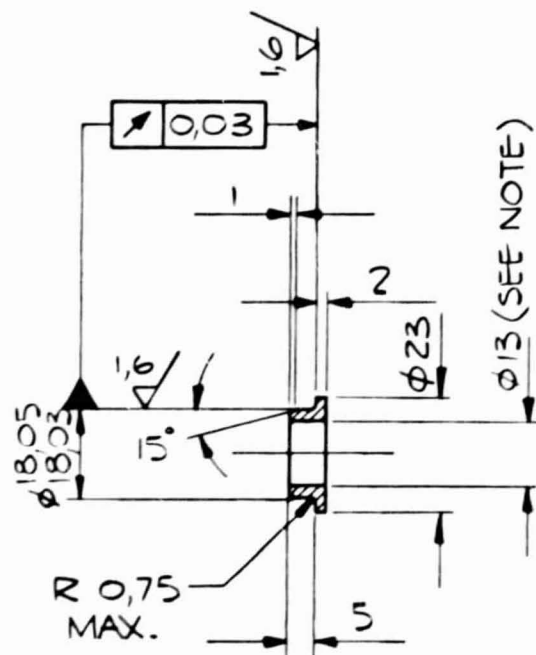
PARTING LINE PRESSURE
AND HEIGHT DETAILS

HOUSING DIA. 28,600
28,588
SHAFT DIA. 25,413
25,400
WALL AT ϕ 1,581
1,574
STEEL AT ϕ 1,34 MAX.
RUNNING CLEARANCE 0,052
0,013

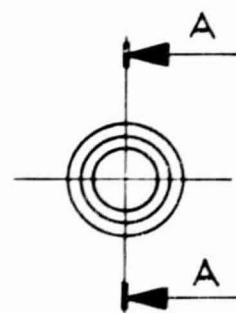
COPIED FROM VANDERVELL DRG. L 10219/5

Standard Part no.	Part no.	Part no.	Part no.	Part no.
	L			

3274-139				
Déjà existant angles giblets To be void unless otherwise specified	Tolerance ISO 715 medium Tolerance ISO 715 medium	Inv. limits value 0.5 Tolerance ISO 715 medium	Sharp corner breaks Remove sharp corners	Europ. pr. ISO 715
Tolerance system ISO	Unit bar/shank/rod Weight calc/weight	Read/Drawn G.T.	Unit bar/shank/rod Weight calc/weight	Read/Drawn G.T.
VP19			Scale 1:1	Group/Group
BIG END BEARING - HYDROGEN PUMP			1/1	A
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co			3-61139	



SECTION A-A

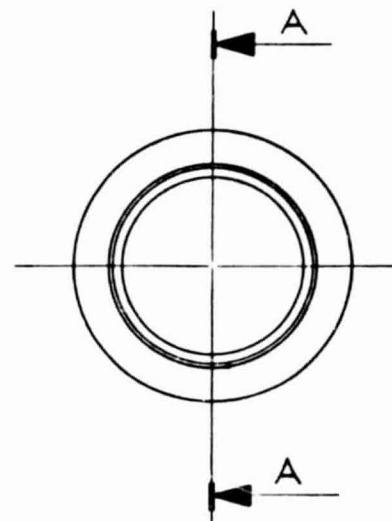
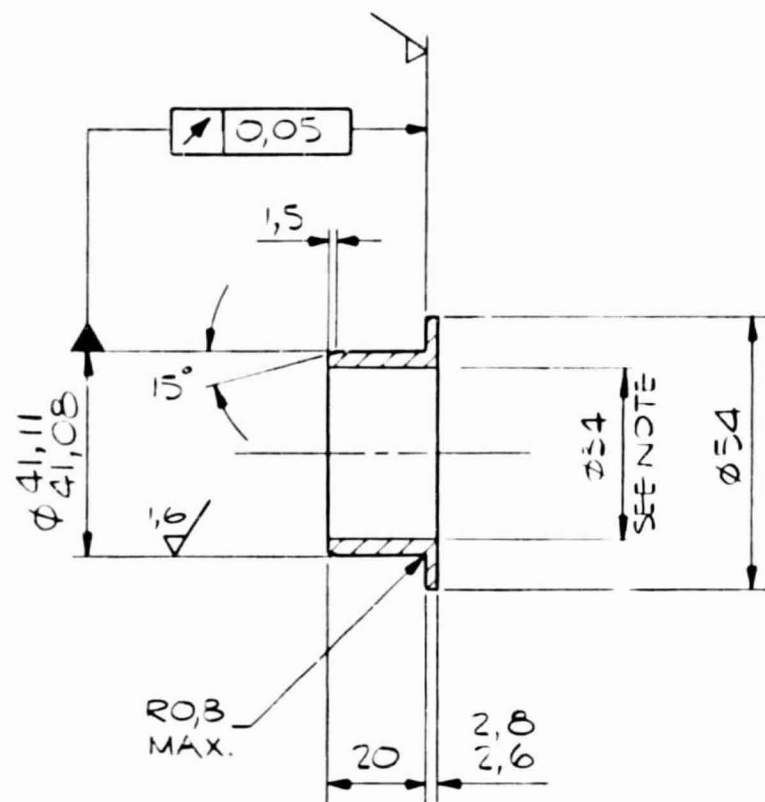


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NOTE :- FINISH MACHINE ON ASSEMBLY WITH
GEAR. SEE DRG N° 61174 (3274-174)

3274-140					
D & E annual angles galler To be valid unless otherwise specified	Tolerances SS 715 medium Tolerances SS 715 medium ±0,25	Max. form radius 0,1 Fillet radius 0,5	Sharp corner braking Remove sharp corners ✓	Euro pro 	Surface roughness Ra μ max 3,2
Tolerances system Tolerances system ISO	Vial tolerance right Weight calc. weighed	Read Drawn G.T.	Konec gr Design checked W.K.	Prod gr Prod checked	Godek Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material PHOS. BRONZE			Scale Scale 1:1	Group Group
	Erstat / Replaces		Erstat av / Replaced by		Sheet no. and Sheet no. total 1/1
	Title BUSH - IDLER HUB			Sheet no / Drawing no 3-61140	

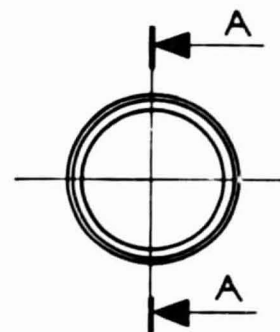
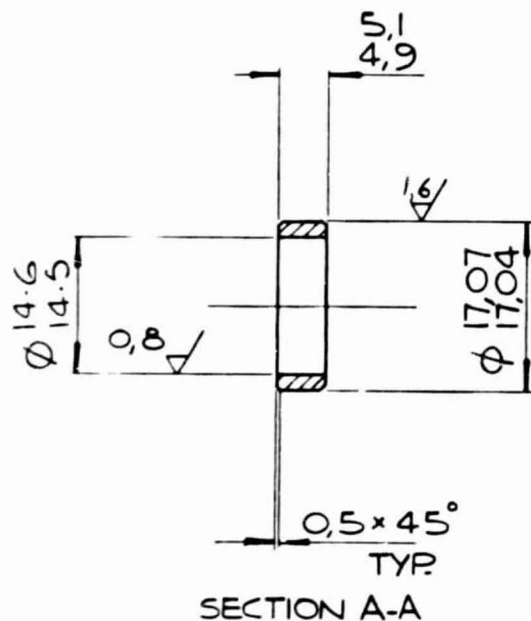
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SECTION A-A

NOTE :- FINISH MACHINE ON ASSEMBLY WITH
REAR BEARING HEG. SEE DRG N° 61147
(3274-147)

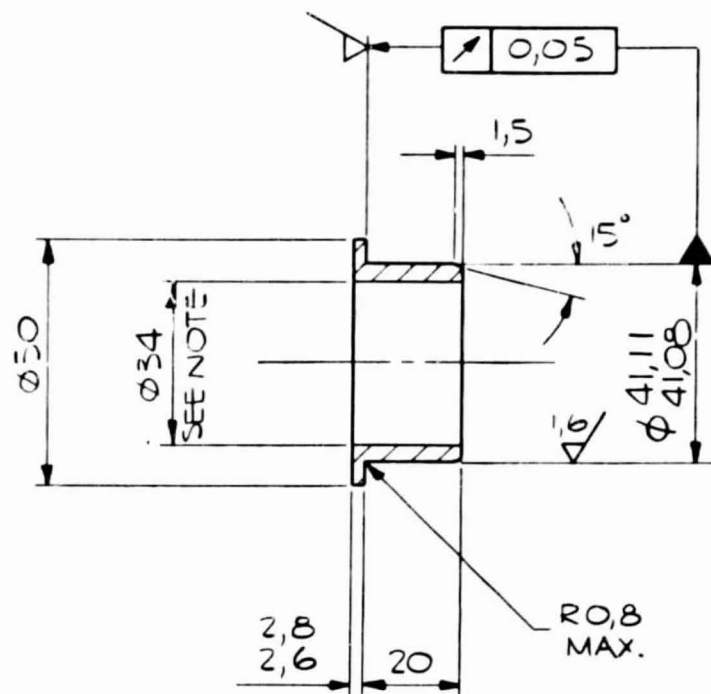
3274-141					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser: SS 715 medel Tolerances: SS 715 medium $\pm 0,25$	Ing. horn: radius 0,5 Fillet: 0,5	Skarpa kanter: brutna Remove sharp corners	Europ. pris: 	Yttemhet: Surface roughness Ra μ max 3,2
Tolerance system: Tolerance system:	ISO	Vikt beräknad: vägd Weight calc: weighed	Ritad: Drawn G.T.	Konstr. gr. Design: checked 	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material: PHOS. BRONZE			Skala: Scale 1:1	Grupp: Group
	Ersätter: Replaces			Blad nr. and Sheet no. total 1/1	Instånd: Rev. letter A
	Titel: OUTER BUSH - REAR BEARING HOUSING			Ritn. nr. Drawing no. 3-61141	



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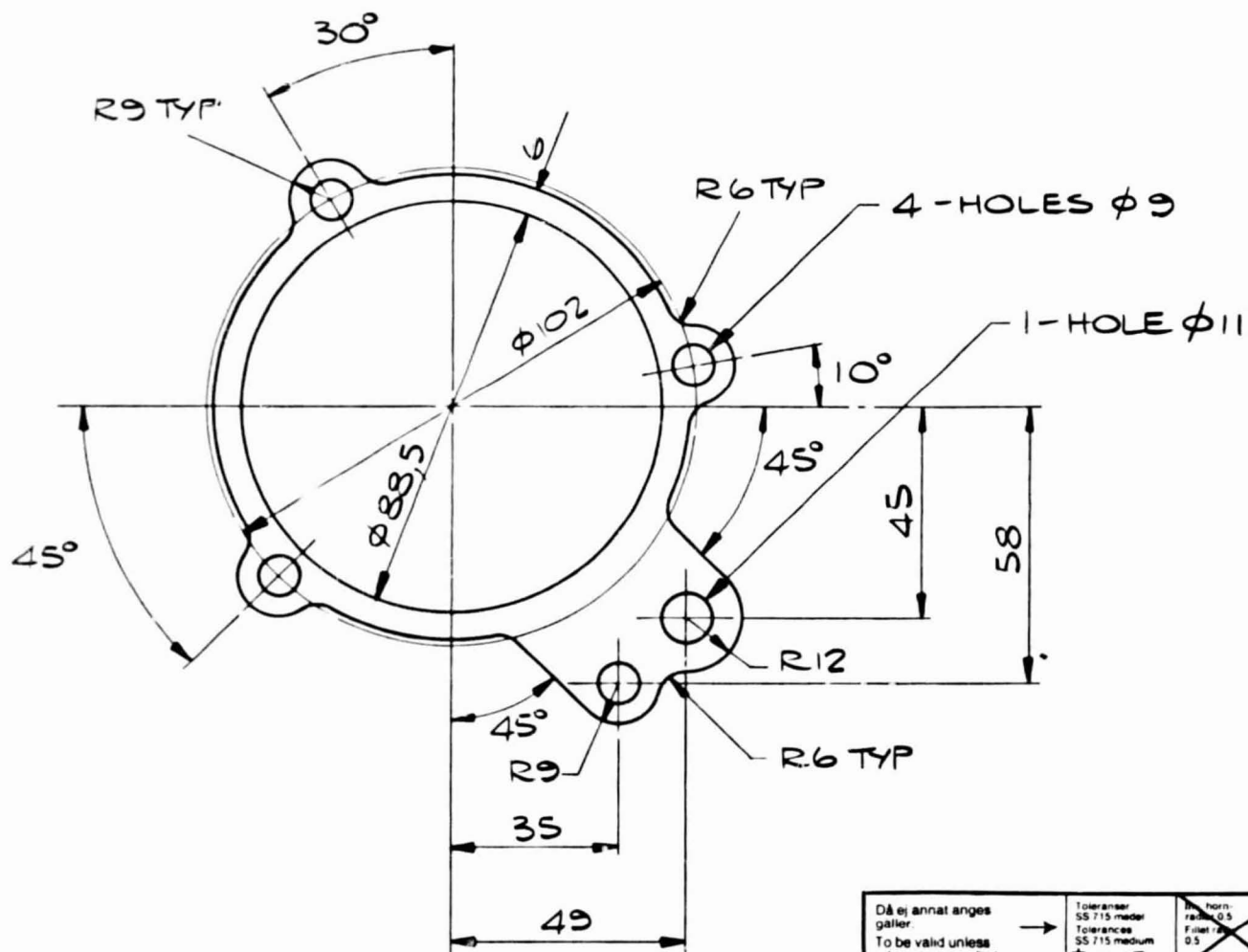
Tillstånd Rev letter	Ändr nr Rev n	Laga Position	Beskrivning Descr	Datum Date	Sign	Godk Approved
A	Δ	C5	14.6/14.5 WAS 15.5/15.2	14-1-80	CMA	

3274 - 14 ²					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium	Max horn- radie 0.5 Fillet radius 0.5	Skarpa kanter börjas Remove sharp corners	Europ. pr. 	Ytmattning Surface roughness Ra μmax 3.2
Toleranssystem Tolerance system ISO	Vikt beräknad, vgd Weight calc. weighed	Risad Dragen DW	Kontroll Design checked	Prod. gr. Prod. checked	Godk. Approv.
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material PHOSPHOR BRONZE		Skala 2:1		Grupp
	Ersätter/Replaces		Ersätts av/Replaced by		Stämmer Shall no. total
	Titel BUSH - SMALL END		Tillstånd Rev. letter A		Rev. nr. Drawing no. 3-61143




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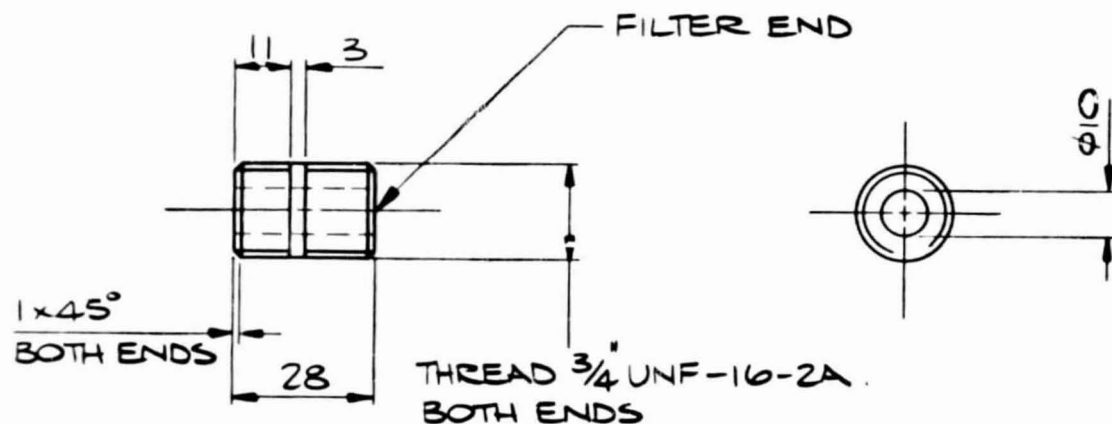
		3274-146					
Då ej annat anges gäller To be valid unless otherwise specified	→	Toleranser SS 715 medium Tolerances SS 715 medium ± 0,25	Reg. horn radius 0,5 Filer rad 0,5	Särpta kanter brutna Remove sharp corners ✓	Europ. prov 	Ytgemmet roughness Ra ju max 3,2/✓	
Toleranssystem Tolerance system: ISO		Vikt beräknad/vägt Weight calc./weighed	Ritad/Drawn G.T.	Konstr. gr. Design checked vdr	Prod. gr. Prod. checked	Godk. Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Material PHOS. BRONZE			Skala Scale 1:1	Grupp Group	
		Ersätter/Replaces		Ersätts by/Replaced by		Bild nr. ant. Sheet no. total: 1/1	Tio tusent Rev. total: A
		Titel INNER BUSH - REAR BEARING HOUSING			Rev. nr./Drawing no. 3-61146		




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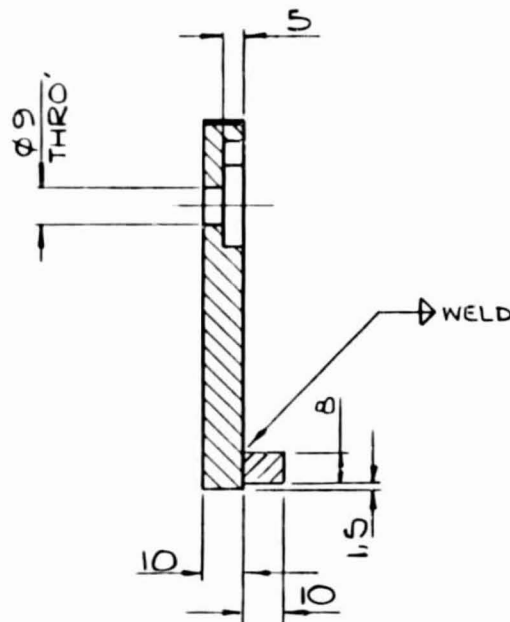
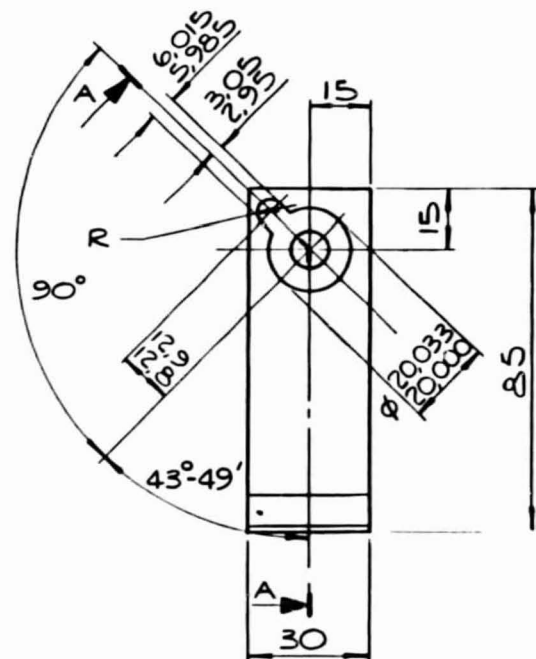
		3274-150	
Då ej annat anges gäller. To be valid unless otherwise specified.	Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	Regerade radius 0,5 Fillet 0,5	Europ. pros. Ytbehandling Surface roughness
Toleranssystem Tolerance system ISO	Vikt beräknad/vägd Weight calc./weighed	Ritad/Drawn A. DEAN	Konstr. gr. Design checked OK
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material: COOPERS G90 0,25 THICK		Skala/Scale 1:1
	Ersätter/Replaces		Grupp/Group
	Ersatt av/Replaced by		Blad nr. ant. Sheet no. total 1/1
Titel GASKET- OIL FILTER HOUSING		Tillstånd Rev. letter A	
		Ritn. nr./Drawing no. 3-61150	

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3274-151					
Då ej annat anges gäller: To be valid unless otherwise specified.	Toleranser SS 715 medel Tolerances SS 715 medium ±0.25	Inv. horn radius 0.5 Fillet radii 0.5 X	Skarpa kanter brutna Remove sharp corners ✓	Europ. pris ☐⊕	Yttermått Surface roughness Ra μ max 3.2/
Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc./weighed	Risör/Drawn A. DEAN	Kontroll Design checked BW 19/10/79	Prod. gr. Prod. checked	Godk. / Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL BS970 220M07 (EN1A)		Skala/Scale 1:1		Grupp/Group
	Ersätter / Replaces		Ersatt av / Replaced by		Blad nr. / ant Sheet no. / total 1/1
	Titel ADAPTOR - OIL FILTER HOUSING		Rev. nr. / Drawing no. 3-6151		Tillstånd Rev. till A

Executive Rev. 10/10	Approved Rev. 10/10	Design Rev. 10/10	Material Rev. 10/10	Location Rev. 10/10	Rev. 10/10	Rev. 10/10
A	11		MATL: WAS 040A10	17-3-BU	LMA	



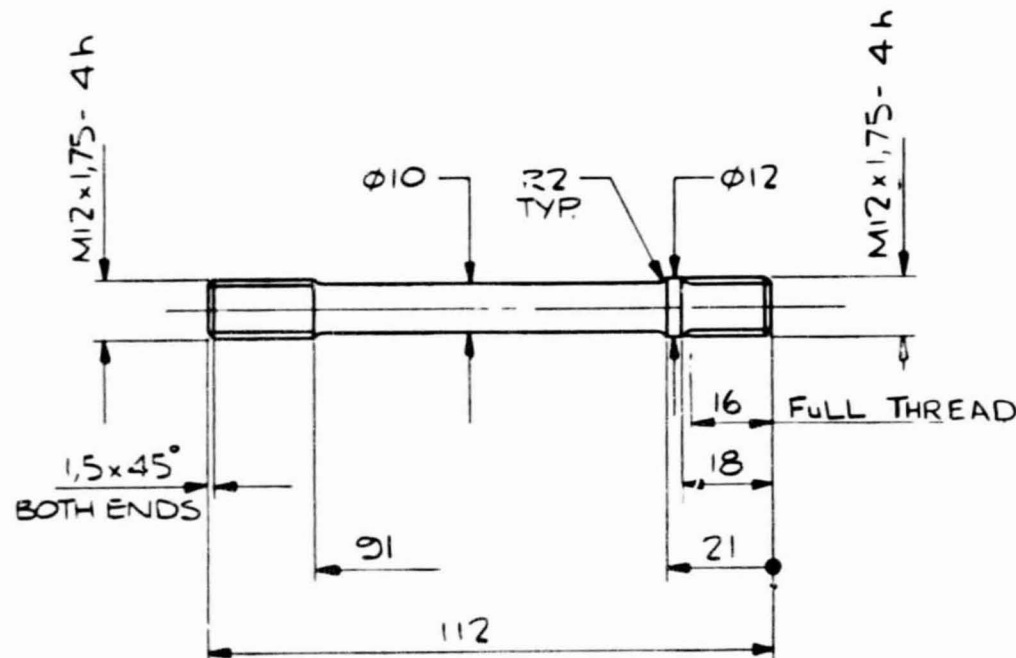
SECTION A-A

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3274 - 161

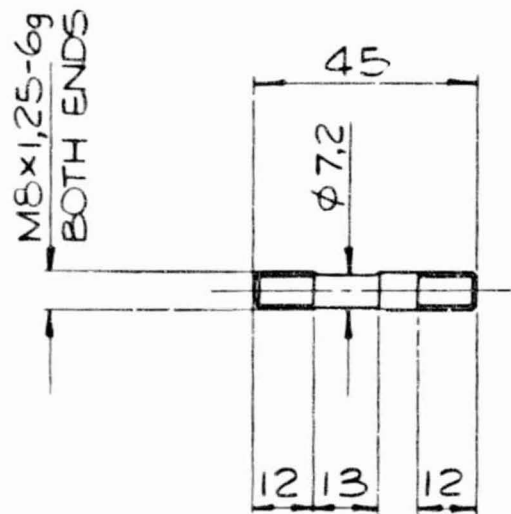
Die is small angles gutter To be void unless otherwise specified	1.000000 55.715 mm Tolerance 55.715 mm	1.000000 55.715 mm Tolerance 55.715 mm	Surface finish Ra 3.2 Ra 3.2	Surface finish Ra 3.2 Ra 3.2	Surface finish Ra 3.2 Ra 3.2
ISO	ISO	ISO	G.A.D.	G.A.D.	G.A.D.
Material STEEL BS 970 220M07 (EN1A)	Material STEEL BS 970 220M07 (EN1A)	Material STEEL BS 970 220M07 (EN1A)	Material STEEL BS 970 220M07 (EN1A)	Material STEEL BS 970 220M07 (EN1A)	Material STEEL BS 970 220M07 (EN1A)
Front end BALANCE WEIGHT	Front end BALANCE WEIGHT	Front end BALANCE WEIGHT	Front end BALANCE WEIGHT	Front end BALANCE WEIGHT	Front end BALANCE WEIGHT

Revision	Rev. letter	Author	Appr. Position	Revising Date	Design Date	Sign	Grade Approved
B	A	ASE	16 FULL THRD ADDED THREAD WAS 6g	30-1-80	VCM		



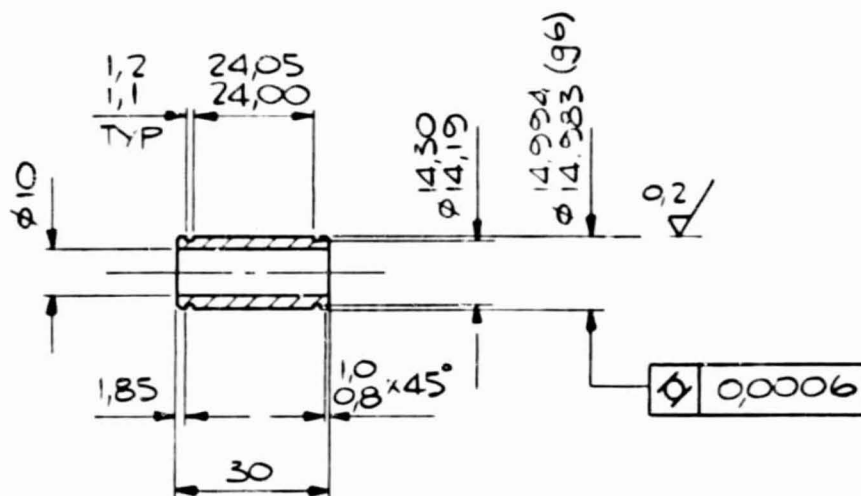
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3274-164			
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium ±0.25	Skarpvinklar brutna Remove sharp corners ✓	Europ. pris 1/1
Toleranssystem Tolerance system ISO	Vikt beräknad enligt weight calc. weighed	Rätt Dragn Kontroll Design checked V&P	Yttemått Surface roughness Ra µ max 3.2/ ▽
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL GRADE 10,9 TO SS 3692		Skala Scale 1:1
	Ersätter: Reproces		Ersatt av: Replaced by
	Titel STUD-CRANKCASE		Blad nr. and Sheet no. total 1/1
			Grupp-Group A
			Blad nr. and Sheet no. total 1/1
			Run nr. Drawing no 3-61164





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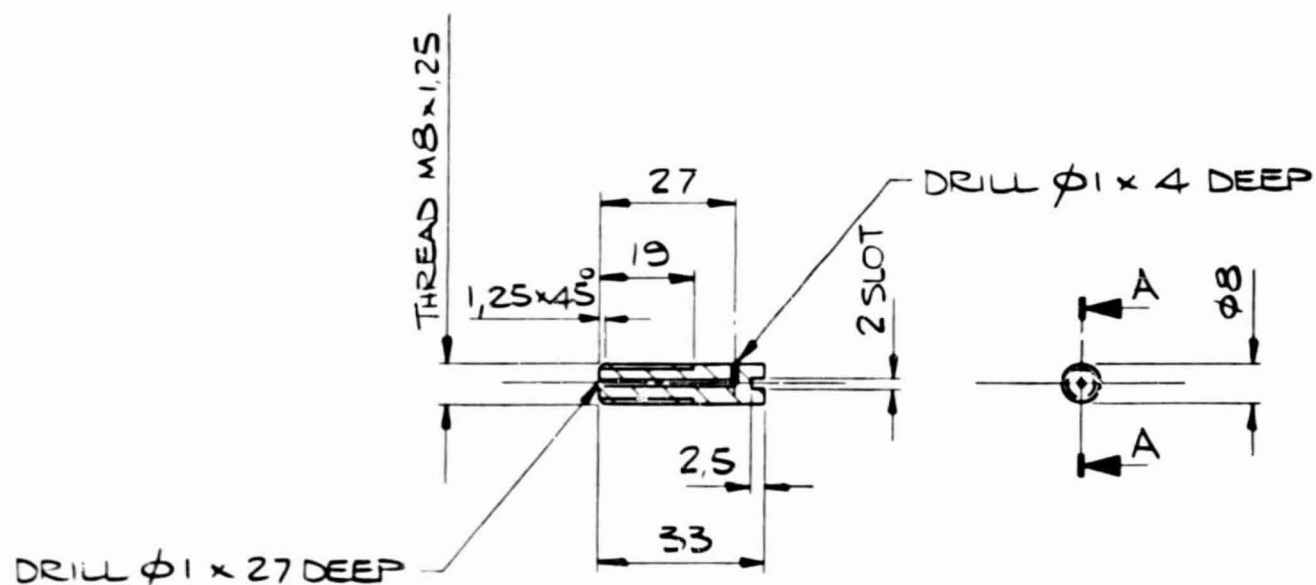
3274-178					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Toler. med SS 715 medium	Inv. form radier 0.5 Fäst radier 0.5	Skarpa vinklar brutna Remove sharp corners	Europ. prov 	Tillåtet Surface roughness Ra μ max
Toleranssystem Tolerance system	ISO	Vikt beräknad/vägd Weight calc./weighed	Risör/Drawn DJW	Konstruktör Design checked 	Prod. gr. Prod. checked
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL BS 970 PT 2 1970 60SM36 (EN 16)			Skala/Scale 1:1	Grupp/Group
	Ersätter/Replaces		Ersätts av/Replaced by	Blad nr. och Sheet no. total	Tolerans Rev. letter
	Titel STUD - HYDROGEN PUMP CON. ROD			Ritn. nr./Drawing no. 3-61178	



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MACHINE $\frac{3,2}{\sqrt{\quad}}$ UNLESS OTHERWISE STATED
CASE HARDEN & GRIND O/D ONLY
HARDNESS 60 RC MIN.
DEPTH OF HARDNESS 0,7/0,5


					3274-179	
Då ej annat anges gäller To be valid unless otherwise specified	→	Tolerances SS 715 medium Tolerances SS 715 medium ± 0,25	Tolerances SS 715 medium Tolerances SS 715 medium ± 0,25	Skarpa kanter brutna Remove sharp corners ✓	Eurod pros 	Ytsmått Surface roughness Ra µ max 3,2/ ▽
		Tolerancesystem Tolerance system ISO	Vikt beräknad vägt Weight calc. weighed	Rätt/Drawn A.D.	Kontroll gj. Design checked KOP	Prior gj. Prod checked
		Material STEEL OBOMIS (EN 32C)			Skala/Scale 1:1	
		Ersätter/Replaces	Ersatt av/Replaced by		Blad nr and Sheet no total 1/1	Tolerans t. is water A
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Typ PISTON PIN - HYDROGEN PUMP				Ritn nr /Drawing no 3-61179



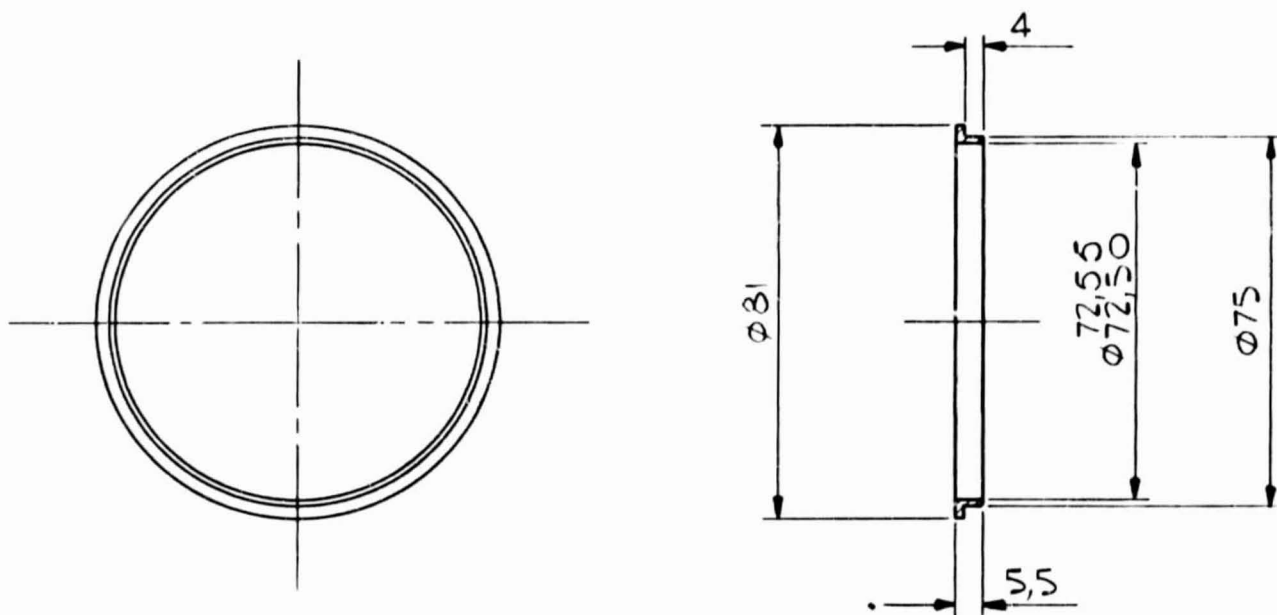
SECTION A-A

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111-290

3274-180					
Då ej annat anges gäller To be valid unless otherwise specified	→ Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	Int. Norm. radius 0,5 Fillet radii 0,5 X	Skarpa kanter bruka Remove sharp corners ✓	Europ. pris ⊕	Yttermått Surface roughness Ra y max 3,2/ ▽
Toleranssystem Tolerance system ISO	Välj beräknad vikt Height calc. weight	Rätt Denum A.DEN	Kontroll Design checked ✓	Prod. gr. Prod. checked	Godk. Approv.
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material: STEEL BS970 220M07 (EN1A)			Skala Scale 1:1	... Group
	Erstat. Replaces			Blad nr. and Sheet no. total 1/1	Föränd. Rev. letter A
	Titel GEAR OILSPRAY JET			Ämne Drawing no 3-61180	

III-291



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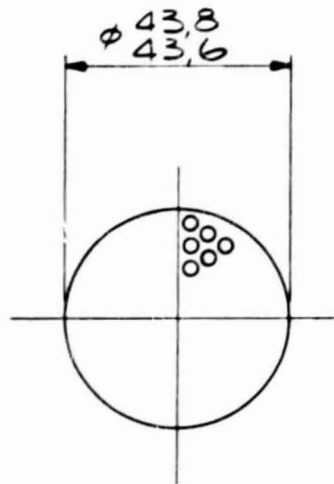
MACHINE 3,2/√ ALL OVER

3274-181

Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium $\pm 0,25$	Inv. horn- radier 0,5 Fillet rad. 0,5	Skarpa vinklar brunn Remove sharp corners	Europ. prot. 	Slämnhet Surface roughness Ra μ max
Toleranssystem Tolerance system ISO	Vikt beräknad vägd Weight calc. weighed	Ritad/Drawn G.T.	Konstr. gr. Design checked	Prod. gr. Prod. checked	Gode Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STAINLESS STEEL			Skala Scale 1:1	Grupp Group
	Ersätter/Replaces		Ersatt av/Replaced by	Blad nr. ant. Sheet no. total 1/1	Inständ Rev. letter A
	Titel FACE RING - WATER PUMP IMPELLER			Ritn. nr. Drawing no. 3-61181	

3274-184 A

[illegible]



PATTERN NO. RT 10

HOLES ϕ 2,4

OPEN AREA 40%

MANUFACTURERS N. GREENING & SON

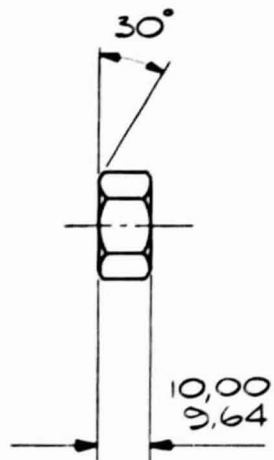
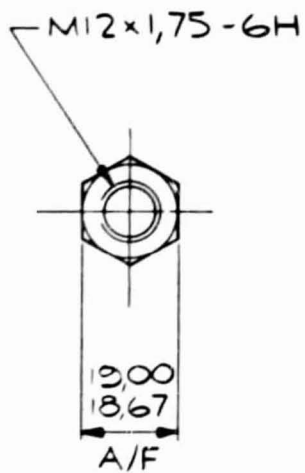
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111-293



3274-185						
Då ej annat anges gäller To be valid unless otherwise specified	→ Toleranser SS 715 medel Toleranser SS 715 medium	Inv. form radier 0,5 Först radier 0,5	Skarpa vinklar avvikelse Remove sharp corners	Europ. prov 	Yttermått Surface roughness Ra μ max	
Toleranssystem Tolerance system ISO	Vikt beräknad/vägt Weight calc. weighed	Risik. Dragen G.T.	Kontroll av Design checked C.M.A.	Provg. Prov. checked	Godk. Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material: STEE-L 18 BG (.049") 1,24mm			Skala Scale 1:1	Grupp Group	
	Ersätter/Replaces		Ersätts av/Replaced by		Blad nr. and Sheet no. total 1/1	Första Rev. sheet A
	Titel STRAINER - OIL SUCTION PIPE			Rit nr. Drawing no. 3-61185		

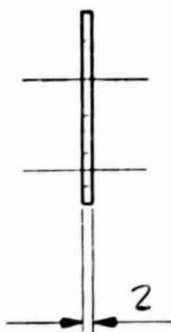
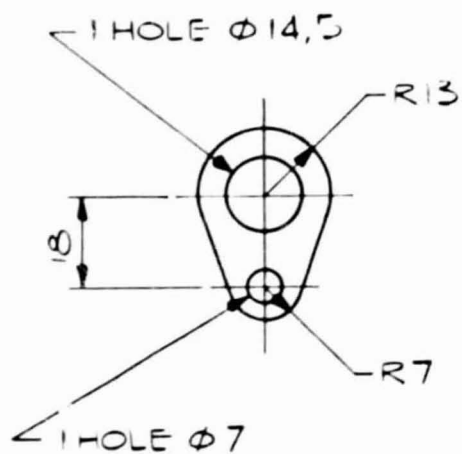
III-294

111-295



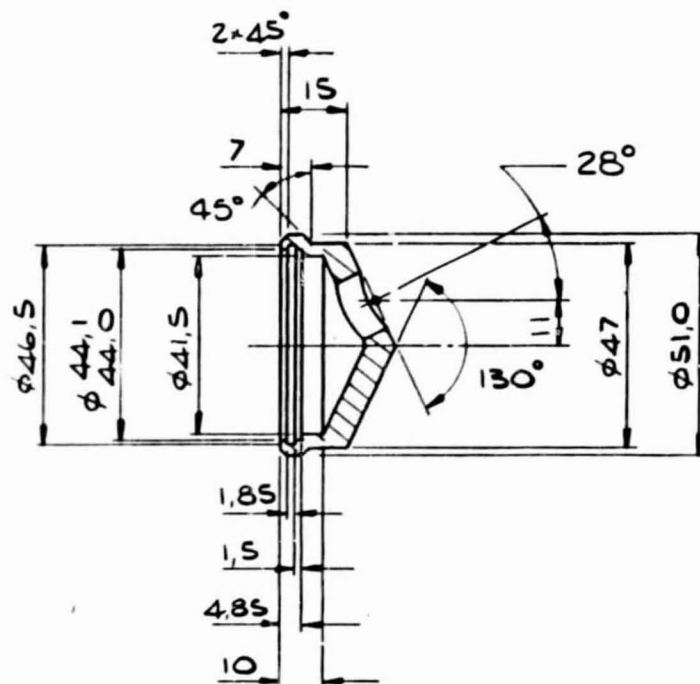
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						3274-199							
Då ej annat anges gäller To be valid unless otherwise specified		Tolertanser SS 715 medel Tolerances SS 715 medium		Inv. form rader 0.3 För inrader 0.5		Skarpa kanter brutna Remove sharp corners		Europ. prov 		Ytfinish Surface roughness		Ra µ max	
Toleranssystem Tolerance system ISO		Värde beräknat värd Weight calc. weighed		Rättat Dragen G.T.		Rättat gr Design checked KUP		Prov gr Prod. checked		Godk. Approved			
		Material STEEL GRADE 12 BS 3692						Skala Scale 1:1		Grupp Group			
		Ersätter/Replaces		Ersätter/Replaced by				Bild nr. and Sheet no. total 1/1		Instånd Rev. letter A			
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co		Titel NUT-MAIN BEARING STUD						Ritn nr/ Drawing no 3-61199					

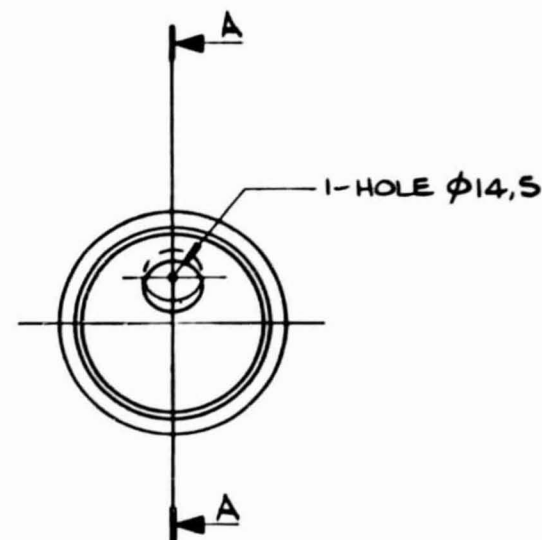


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3274-212					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser: SS 715 medel: Tolerances: SS 715 medium: ±0,25	 Horn: radius 0,5 Fillet 0,5 	Skarpa vinklar: brutna Remove sharp corners ✓	Europ. prov: 	Yttextur: Surface roughness Ra µ max
Toleranssystem: Tolerance system ISO	Vikt beräknad, vägd Weight calc., weighed	Ritad: Dragen G.T.	Kontrollerat: Design checked: CMA	Prod. gr. Prod. checked	Godk. Approv.
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material: STEEL BS 970 220 M07 (ENIA)	Skala: Scale 1:1	Grupp: Group		
	Ersätter: Replaces	Ersätts av: Replaced by	Blad nr. av: Sheet no. total 1/1	Följande: Rev. anteck. A	
	Titel: PIPE RETAINING PLATE			Ritn. nr. Drawing no. 3-61212	



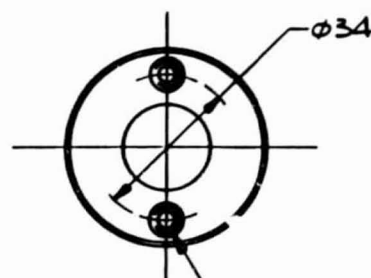
SECTION A-A

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3,2 /
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REMOVE ALL BURRS & SHARP EDGES

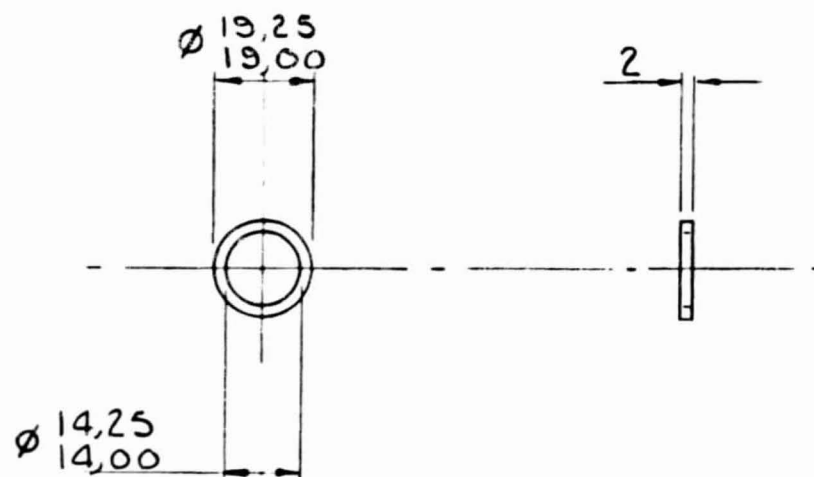
Då ej annat anges gäller: To be valid unless otherwise specified		Toleranser SS 715 medium Tolerances SS 715 medium	Inv. toler. SS 715 Tolerances SS 715 medium	Skarp hörn bränna Remove sharp corners	Form Form	Toleranser SS 715 medium Tolerances SS 715 medium	Regr. mät Regr. mät
Toleranssystem Tolerance system	ISO	Varit beräknat/vikt Weight calc/weight	Rätt/Drott A. DEAN	Rätt/Drott C. M. A.	Proff Proff	Grupp/Grupp	Grupp/Grupp
Material STEEL BS 970 220 M07 (ENIA)		Skala/Scale 1:1		Grupp/Grupp 1/1		Grupp/Grupp A	
Ersätter/Replaces		Ersatt av/Replaced by		Titel HOUSING - STRAINER		Regr. mät 3-61213	
KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co							

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- 2 HOLES M6 x 1-6H THRO'
CSK. $\phi 7 \times 90^\circ$ BOTH SIDES

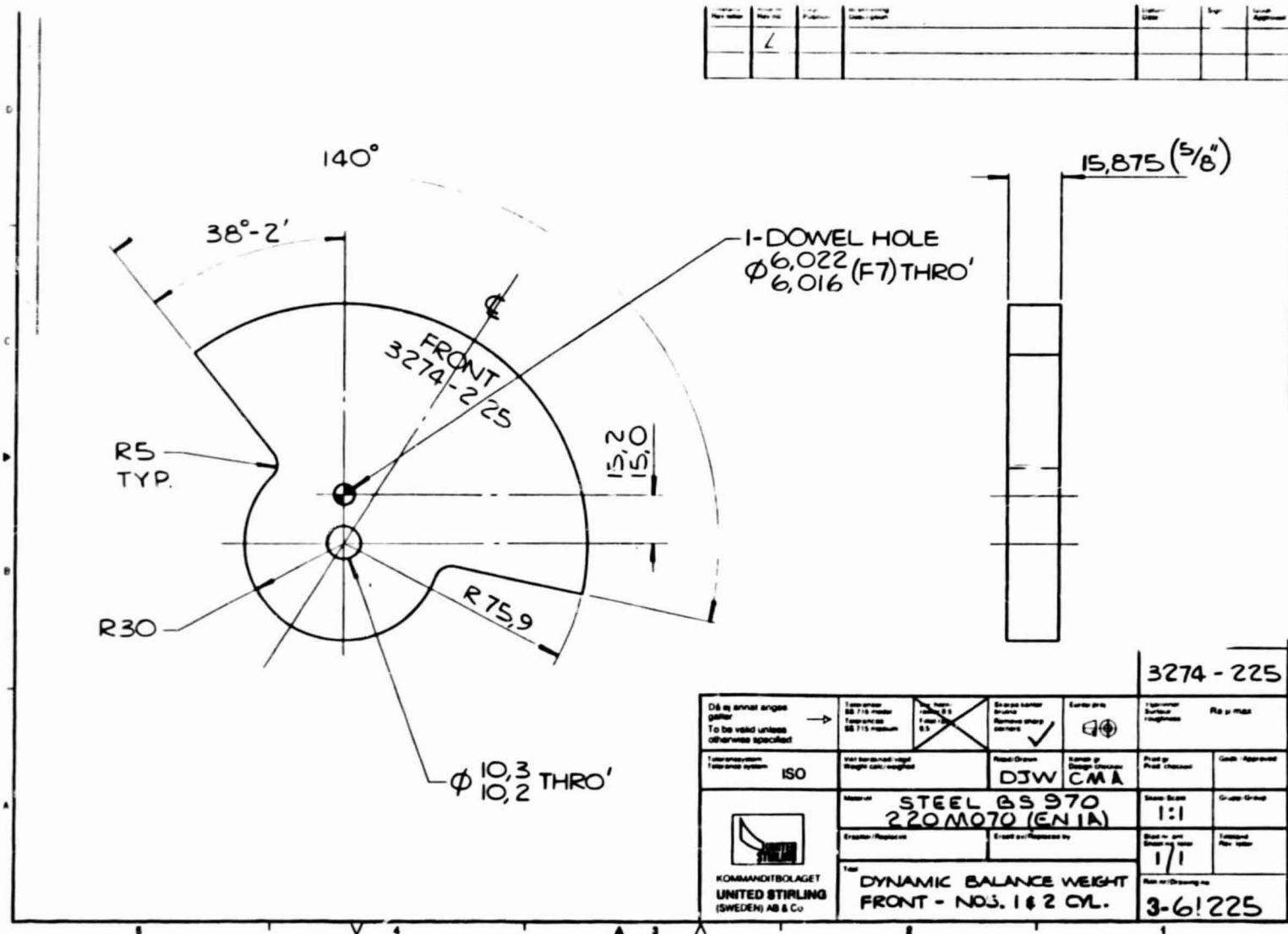
Dä ej annat anges gäller → To be valid unless otherwise specified	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
	Toleranssystem Toleranssystem ISO	Vald bearbetnings- sätt Weight Weight	Material G.T.	Konstruktör Design C.M.A.	Provgrupp Proof Group
	Material PHOS. BRONZE 268 PB102	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm
KOMMUNIKATIONSLAGET UNITED STIRLING (SWEDEN) AB & Co	Toleranser BS 715 medel tolerans BS 715 maximum $\pm 0,25$	Hållfasthet $\frac{R_m}{\sigma_b}$	Grund Rumsförhållanden ✓		Yttemått Surface roughness Ra µm </



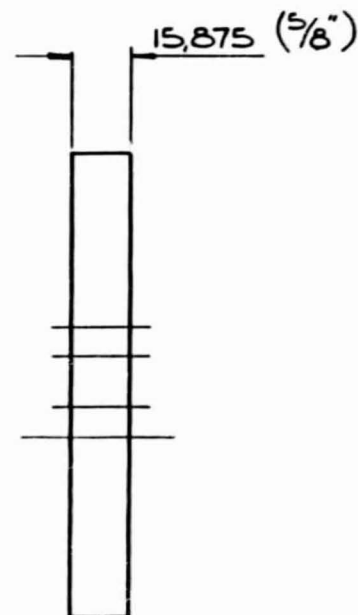
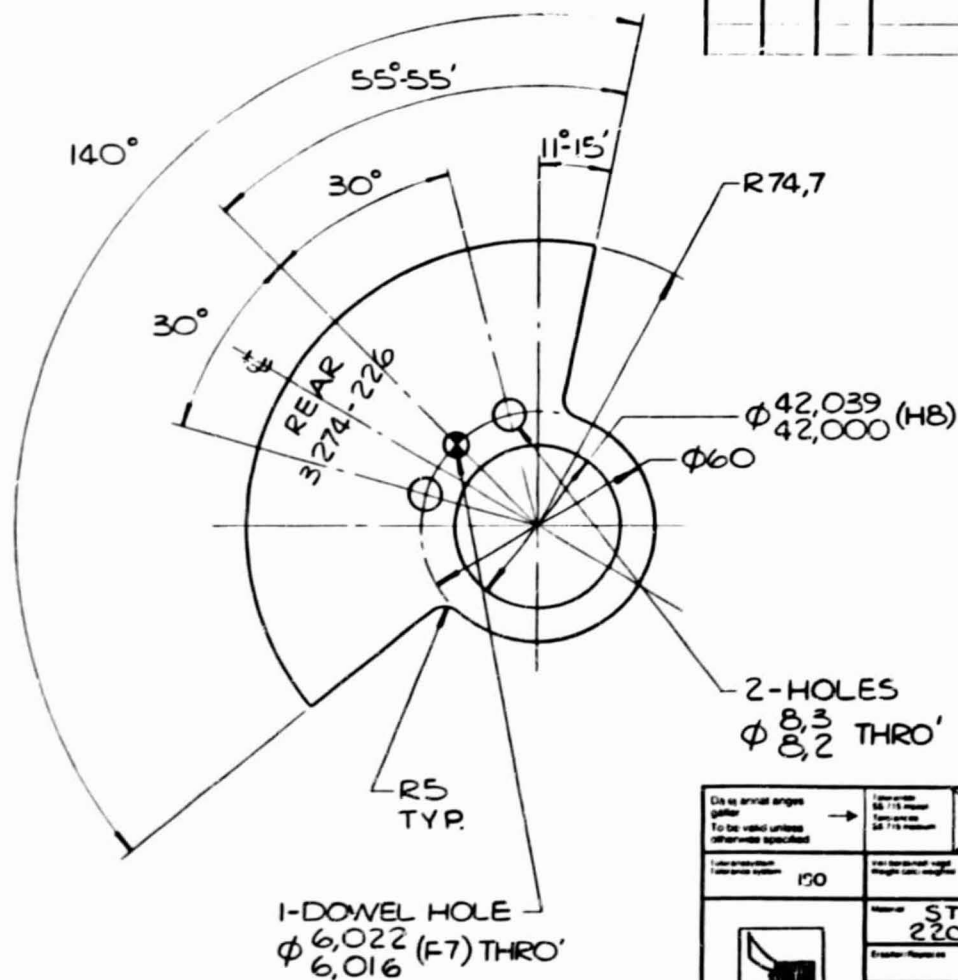
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3,2/√ UNLESS OTHERWISE STATED.
REMOVE SHARP EDGES

3274-223					
Då ej annat anges gäller To be valid unless otherwise specified	Toleranser SS 715 medel Tolerances SS 715 medium ± 0,25	inv. horn radius 0,5 Fillet radii 0,5	Skarpa kanter Bruks Remove sharp corners ✓	Europ. prov 	Yttemått Surface roughness Ra µ max 3,2/√
Toleranssystem Tolerance system ISO	Vikt beräknad, väg Weight calc. weighed	Risat/Drawn CMA.	Konstr. gr. Design checked SWK	Prod. gr. Prod. checked	Godk. Approved
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material STEEL BS970 220M107 (EN1A)			Skala/Scale	Grupp/Group
	Ersätter/Replaces		Ersatt av/Replaced by	Blad nr./gr. Sheet no./total	Första Rev. till
	Titel COLLAR-'O' RING			Rita nr./Drawing no. 3-61223	



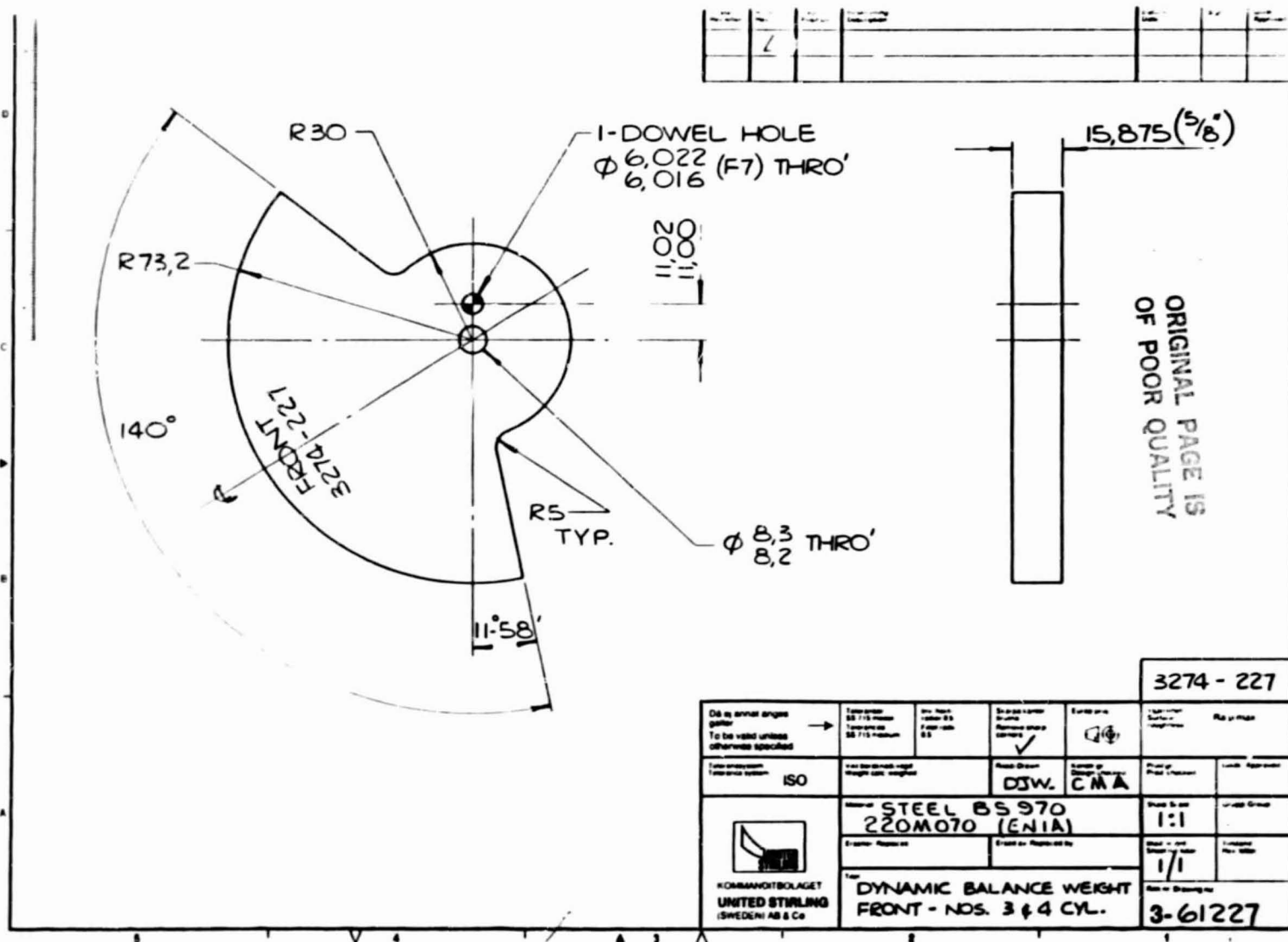
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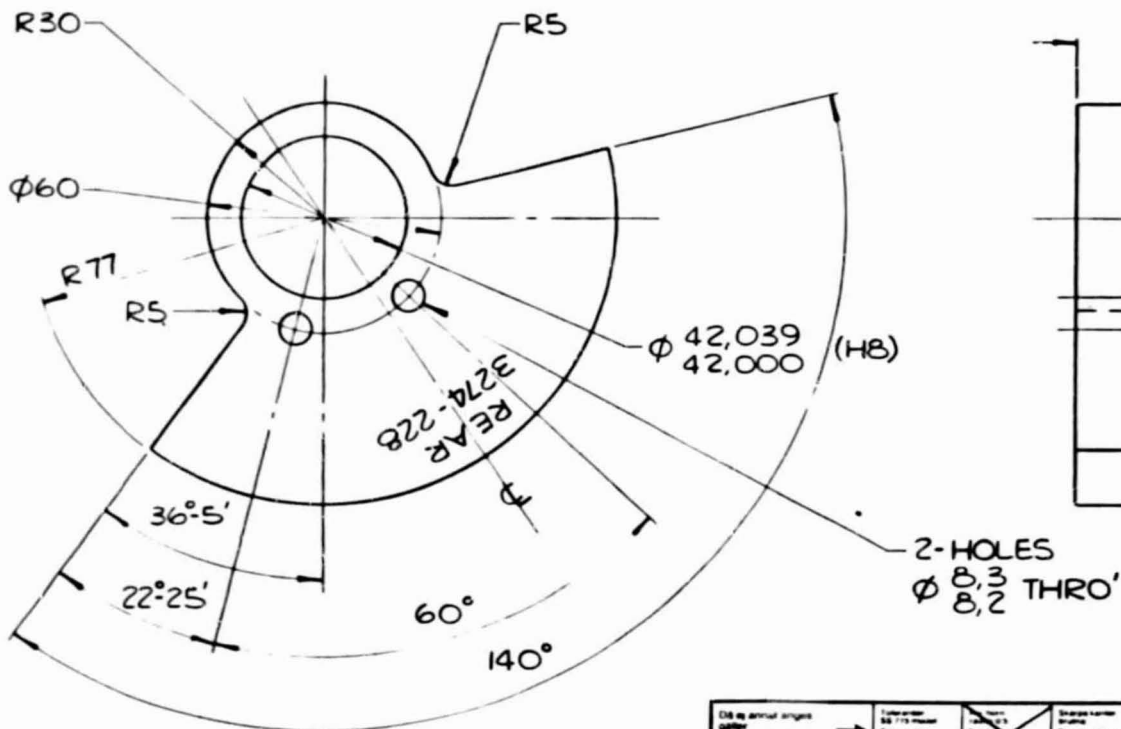
3274 - 226

Dis as arrival angles gitter To be used unless otherwise specified	1. Material 60-75 alloy 2. Tensile strength 60-75 alloy	3. Heat 1. 1000-1015 2. 1015-1025 3. 1025-1035	4. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	5. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	6. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035
1. Material 60-75 alloy	2. Tensile strength 60-75 alloy	3. Heat 1. 1000-1015 2. 1015-1025 3. 1025-1035	4. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	5. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	6. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035
1. Material 60-75 alloy	2. Tensile strength 60-75 alloy	3. Heat 1. 1000-1015 2. 1015-1025 3. 1025-1035	4. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	5. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	6. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035
1. Material 60-75 alloy	2. Tensile strength 60-75 alloy	3. Heat 1. 1000-1015 2. 1015-1025 3. 1025-1035	4. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	5. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	6. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035
1. Material 60-75 alloy	2. Tensile strength 60-75 alloy	3. Heat 1. 1000-1015 2. 1015-1025 3. 1025-1035	4. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	5. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035	6. Surface 1. 1000-1015 2. 1015-1025 3. 1025-1035

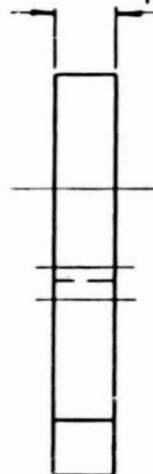
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3274-228

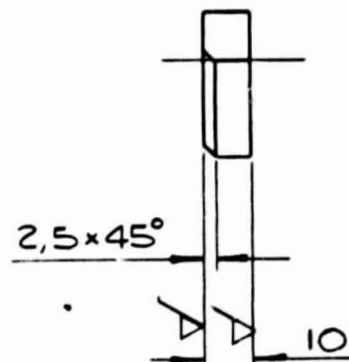
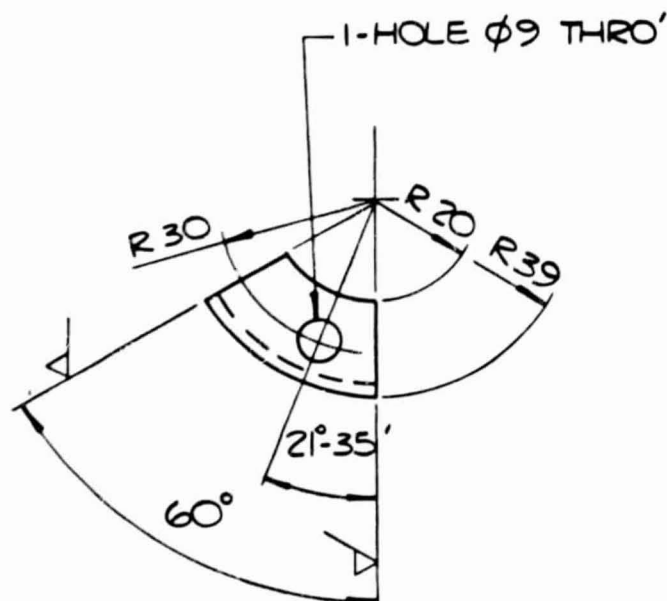
Check all items gutter To be called unless otherwise specified	<input checked="" type="checkbox"/> Tolerances AS 175 standard <input checked="" type="checkbox"/> Tolerances AS 175 standard <input checked="" type="checkbox"/> Tolerances AS 175 standard	<input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish	<input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish	<input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish	<input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish <input checked="" type="checkbox"/> Surface finish
ISO	ISO	ISO	ISO	ISO	ISO
Material	STEEL BS970	220M070 (EN1A)	Scale	1:1	Drawn/Check
Dynamic Balance Weight	REAR - NDS. 3 & 4 CYL.		Scale	1:1	Drawn/Check
Part no. Drawing no.	3-61228		Scale	1:1	Drawn/Check




KOMMANDITBOLAGET
UNITED STIRLING
(SWE) AB & Co

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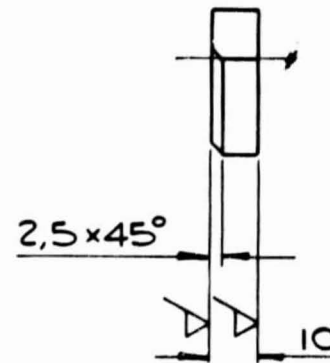
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A	△		MATL WAS 040A10	17-3-80	CMA	



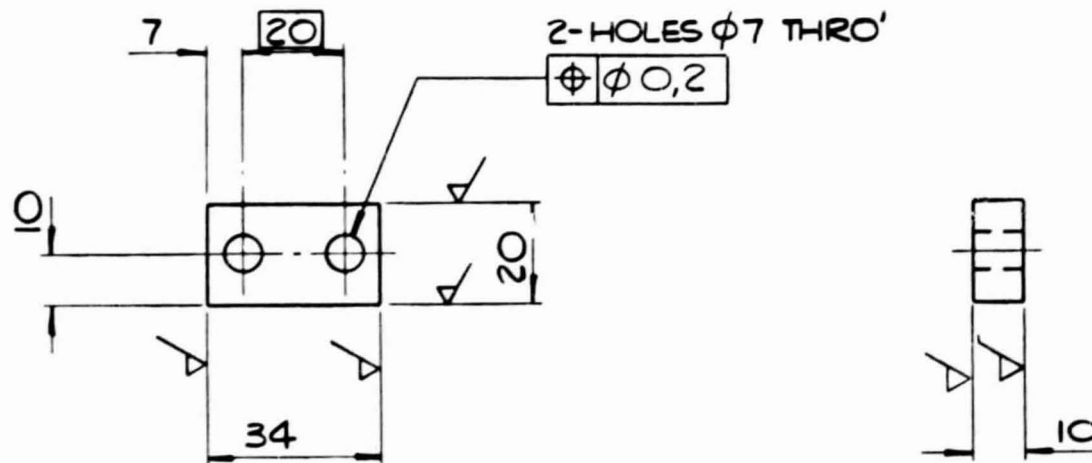
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Dokumentation gäller To be valid unless otherwise specified		Tolerance: SS 715 medium Tolerance: SS 715 medium	Inv. form radius 0.5 Fillet radii 0.5	Sharp corner brims Remove sharp corners ✓	Europ. proj. E10	Surface roughness 3,2/√	3274/235
Tolerance system: Tolerance system	ISO	Material: vagn Weight: c. vagn	Prod. Drawn G.A.D.	Kontroll Design checked SWK	Prod. gr. Prod. checked	Godk. Approved	
 KOMMANDITBOLAGET UNITED STIRLING (SWEDEN) AB & Co	Material:	STEEL BS 970 220M07 (EN1A)		Scale: 1:1	Grupp: Group		
	Erstat. Replaces	Erstat. av: Replaced by		Blad nr / ant Sheet no. / total	Tillstånd Rev. letter		
	Titel GEAR BALANCE WEIGHT		Blad nr / ant Sheet no. / total		Rev. nr / Drawing no		
						3-61235	

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111-306

Revision Rev. letter	Approved Rev. no.	Design Function	Material Designation	Scale Date	Size	Check Approval
A	11		MATL: WAS 040A10	17.3.80 CMA		



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3274-233					
Designation galler To be valid unless otherwise specified	Material SS 115 medium Tolerance as SS 115 medium	Surface finish Ra 1.6 Ra 0.8	Surface roughness Ra 1.6 Ra 0.8	Surface roughness Ra 1.6 Ra 0.8	Surface roughness Ra 1.6 Ra 0.8
Tolerance system Tolerance system	ISO	Material STEEL BS 970 220M07 (EN 1A)	Scale 1:1	Sheet no. and Sheet no. total 1/1	Sheet no. and Sheet no. total 1/1
Material	STEEL BS 970 220M07 (EN 1A)	Scale	1:1	Sheet no. and Sheet no. total 1/1	Sheet no. and Sheet no. total 1/1
Eraser/Replaces		Eraser/Replaces by		Sheet no. and Sheet no. total 1/1	Sheet no. and Sheet no. total 1/1
Title FLYWHEEL BALANCE WEIGHT				Rev. no./Drawing no. 3-6/233	



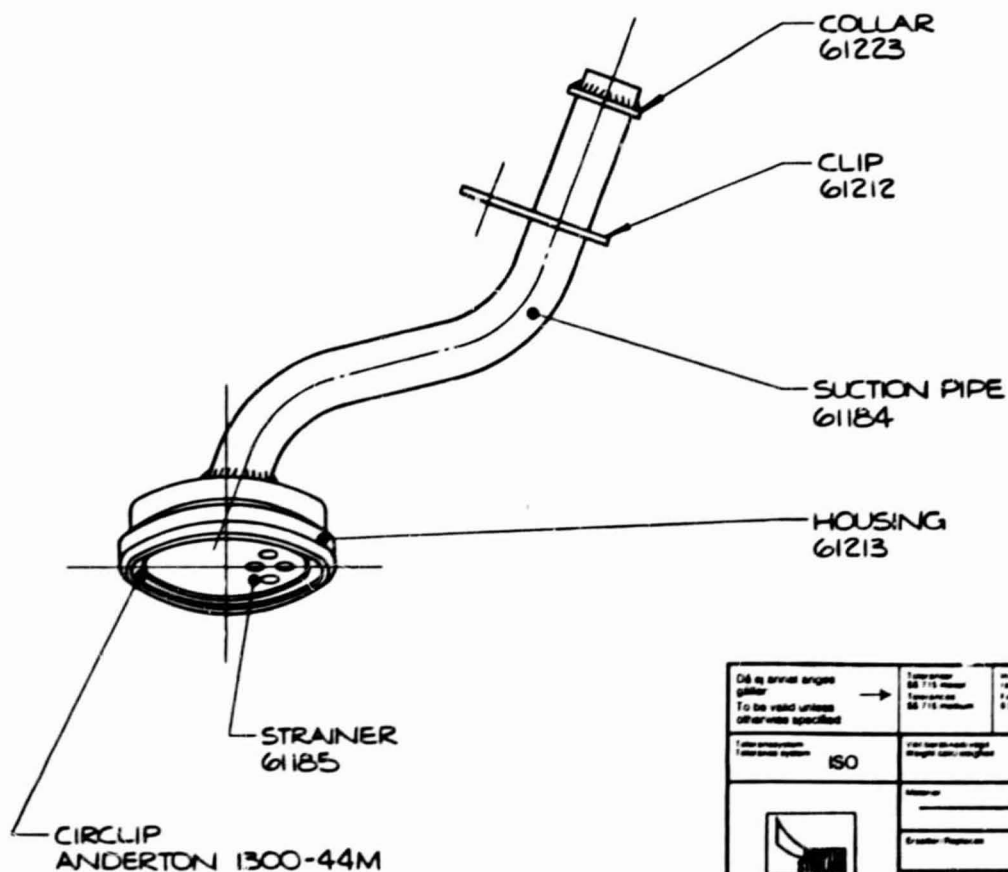
KOMMANDITBOLAGET
UNITED STIRLING
(SWEDEN) AB & Co

111-308

1. This drawing is a technical drawing of a part of a machine. It is not a photograph of the part. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look.

2. This drawing is a technical drawing of a part of a machine. It is not a photograph of the part. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look.

3. This drawing is a technical drawing of a part of a machine. It is not a photograph of the part. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look. It is a drawing of the part as it is, not as it may look.



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1. Drawing Name	2. Part Name	3. Part Number	4. Drawing Description	5. Drawing Date	6. Drawing By	7. Drawing Appr.

3274 - 241

Oil is drawn into filter To be used unless otherwise specified	Temperature 60-75 degrees Temperature 60-75 degrees	Oil Grade SAE 10W-30	Strainer Number 61185	1. Drawing Date	2. Drawing By	3. Drawing Appr.
ISO	ISO	ISO	ISO	ISO	ISO	ISO
G.A.D.			ISO	ISO	ISO	ISO
UNITED STIRLING (SWEDEN) AB & Co			PARTS LIST DRG. OIL STRAINER ASSEMBLY			
3-61241			3-61241			

Drawings

ASE MOD I, Engine Drive System

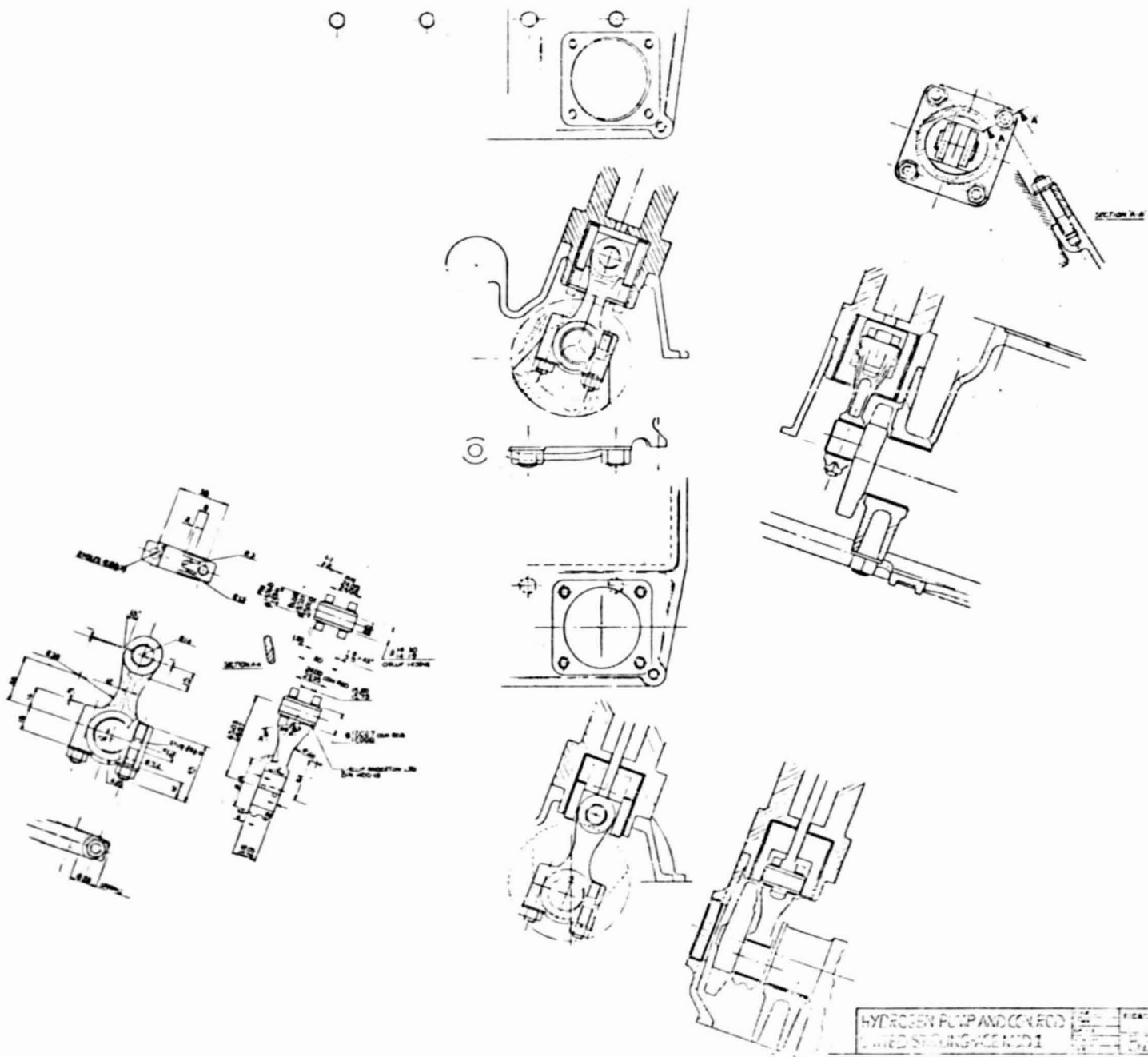
- For overall system layout, reference is also made to sections 2:2 and 3:2.
- Sub-system Layouts
 - 3274-25 Crankshaft and Conn.-rod Layout
 - 3274-26 Link and Chain Drive System
 - 3274-32 Hydrogen Compressor Drive Arr.
 - 3274-39 Rear End and Water Pump Arr. (2 sheets)
 - 3274-37 Lubrication Oil System
 - 3274-30 Bedplate Arrangement
 - For Crankcase, ref. is made to details
 - Crankcase/Bedplate Assy (scheme)
- System details
 - 1-61101 Connecting rod - Power piston
 - 1-61112 Crankshaft Nos. 1 & 2 cylinders
 - 1-61113 Crankshaft Nos. 3 & 4 cylinders
 - 1-61116 Crankcase (7 sheets)
 - 1-61117 Bedplate (4 sheets)
 - 1-61121 Intercasing (3 sheets)
 - 1-61123 Water Pump Body
 - 2-61114 Connecting rod - Hydrogen pump
 - 2-61166 Straight Spur Gear - Driveshaft
 - 2-61167 Straight Spur Gear - Crankshaft
 - 2-61168 Helical Gear - Driveshaft
 - 2-61169 Helical Gear - Crankshaft
 - 2-61170 Helical Idler Gear 72 Teeth (3100 rev/min)
 - 2-61171 Helical Idler Gear 83 Teeth (3600 rev/min)
 - 2-61172 Helical Water Pump Gear 153 Teeth (3100 rev/min)
 - 2-61173 Helical Water Pump Gear 131 Teeth (3600 rev/min)
 - 3-61125 Shaft-Water Pump

- Supporting test object assemblies and results are found in a separate report (Ricardo).
- Comment
Rig test adapters (fly-wheel, clutch, engine mounts etc) are prepared but not yet designed.

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III-311

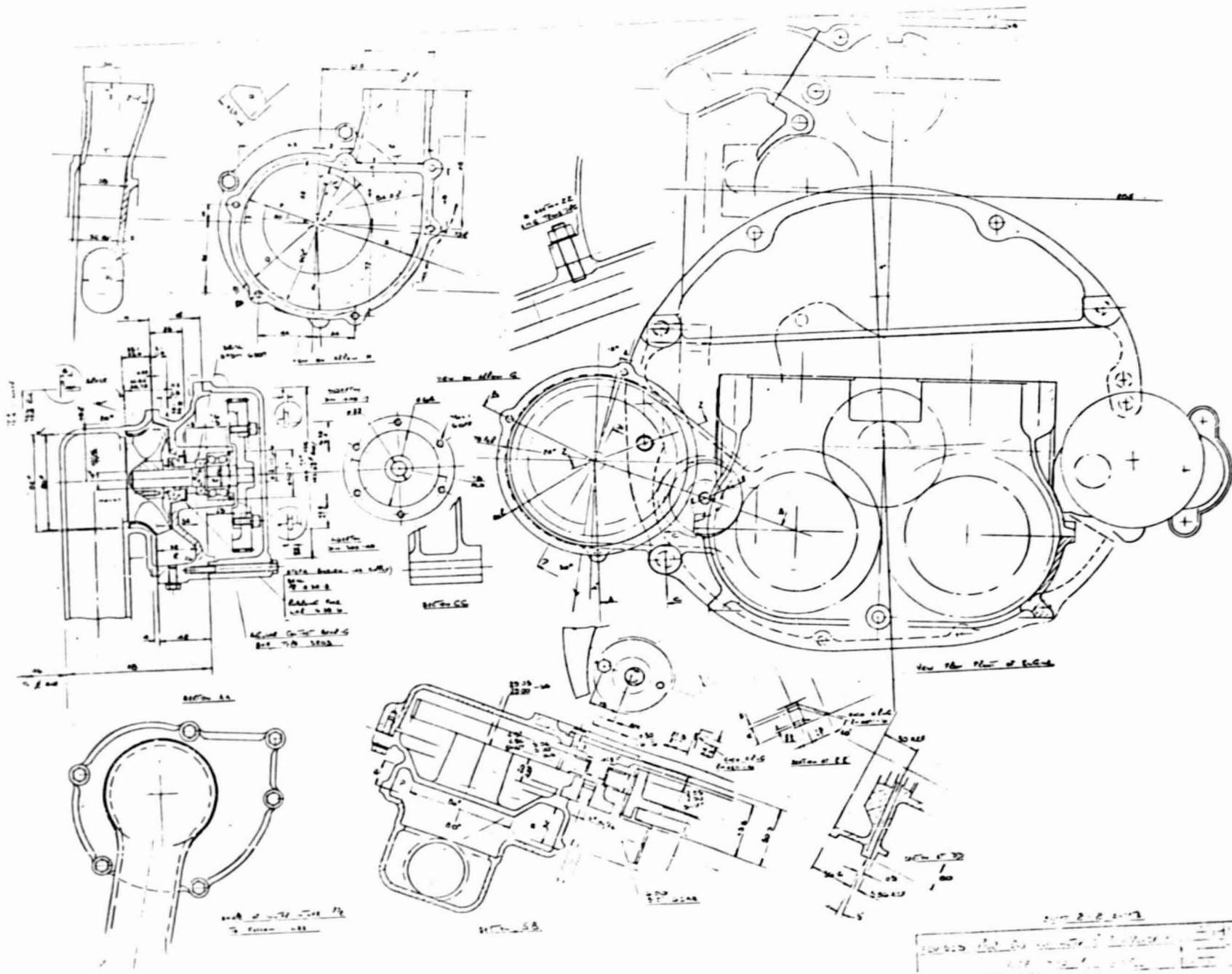
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HYDROGEN PUMP AND CONNECTED
LINES SECTION A-A

SECTION B-B
SECTION C-C

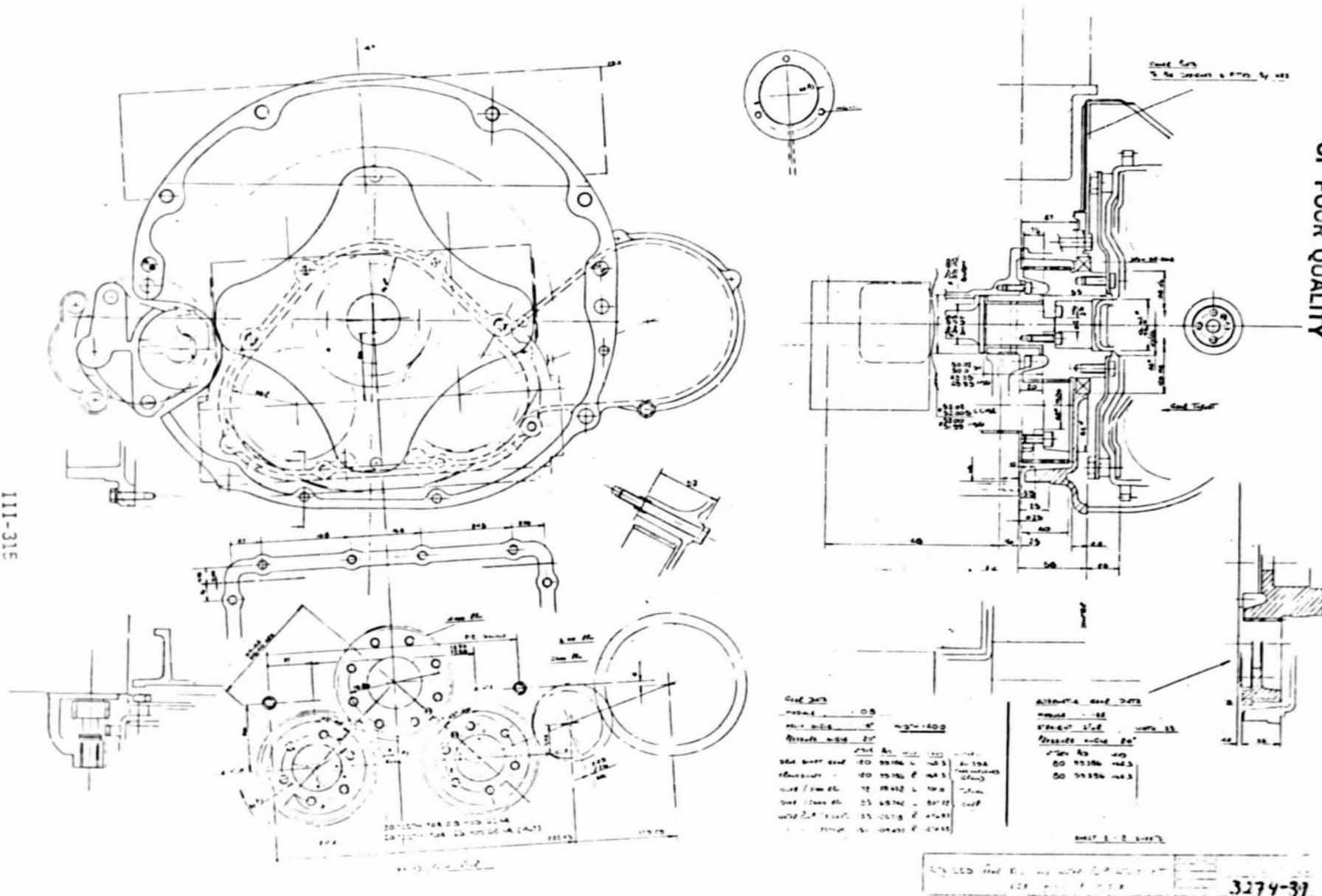
III-314



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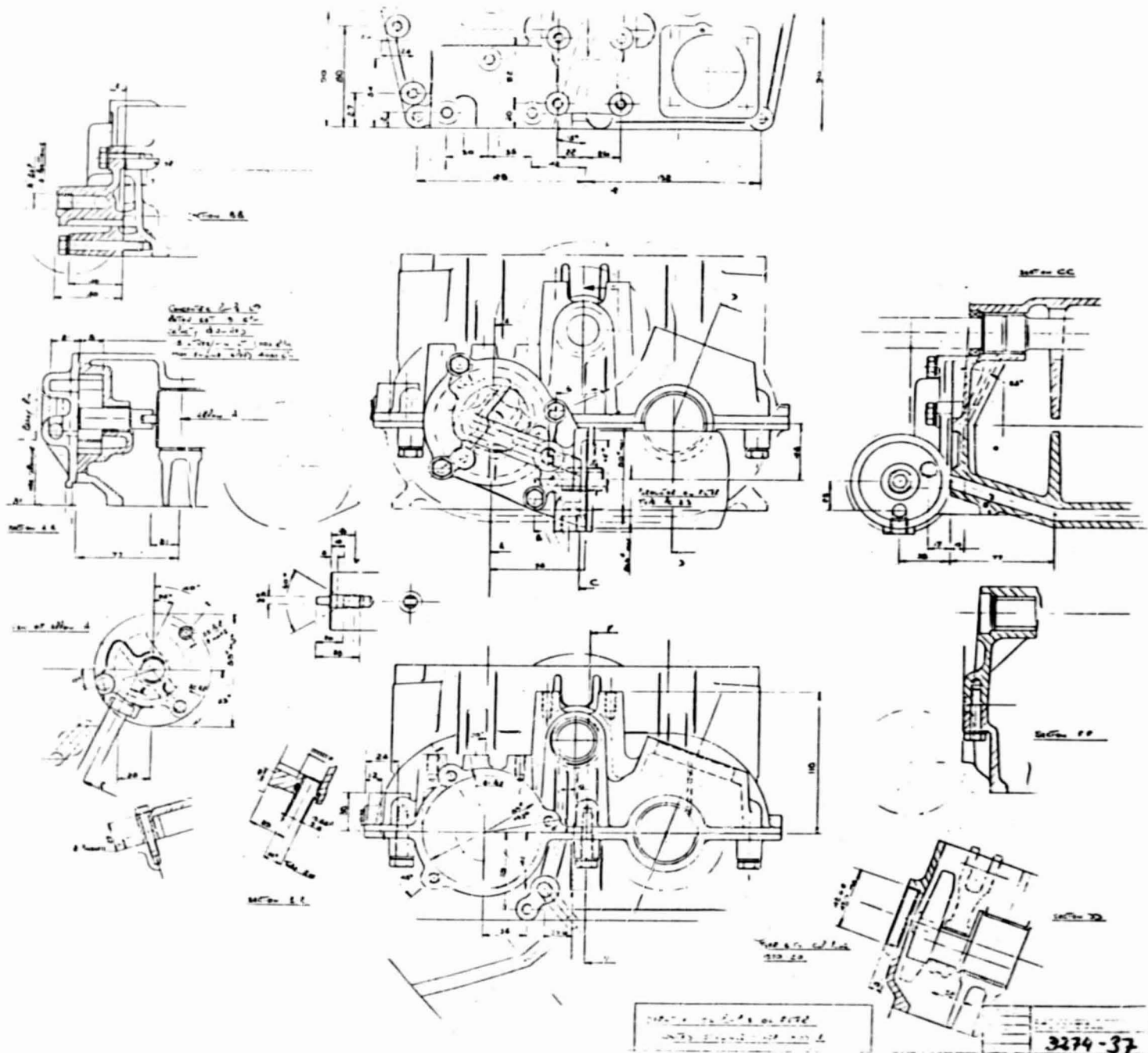
3274-39

ORIGINAL PAGE IS
OF POOR QUALITY

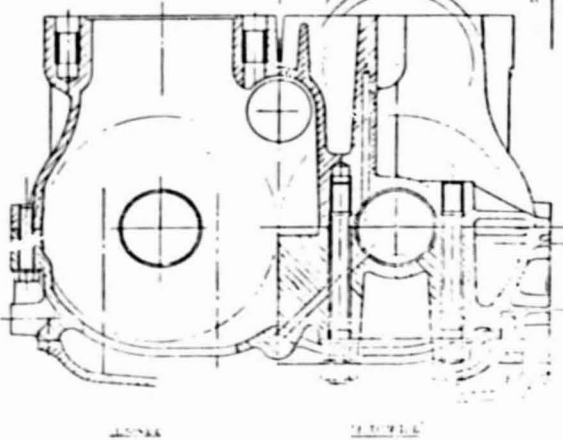
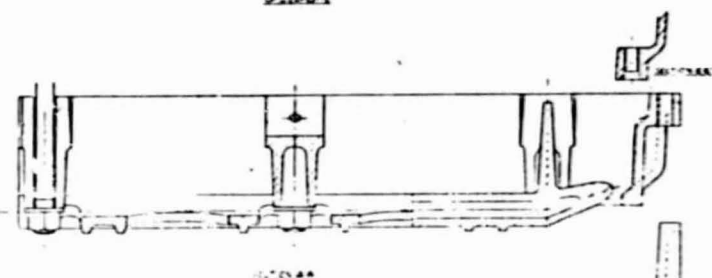


III-315

ORIGINAL PAGE IS
OF POOR QUALITY

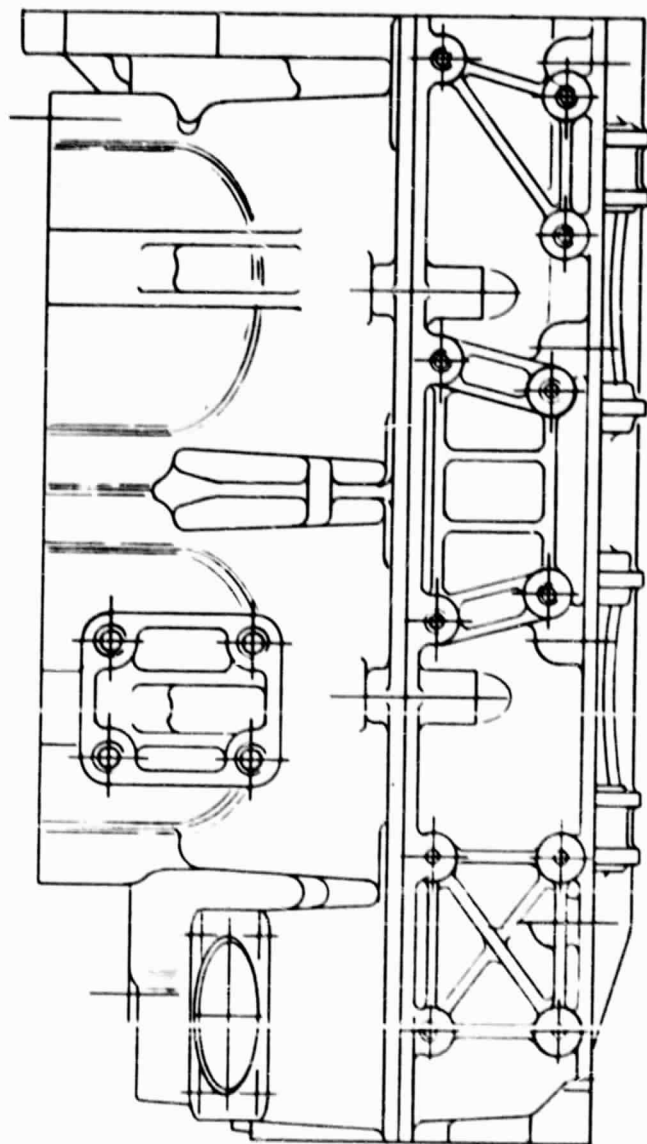


A technical drawing of a rectangular plate, likely a cover or end plate, featuring four large, vertically oriented oval cutouts arranged in a 2x2 grid. The plate is reinforced with a grid of smaller, circular holes. The drawing includes dimension lines and labels, such as 'G' and 'H', indicating specific features and measurements. The overall design suggests a component used in a mechanical or structural application.



UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535
JAN 17 1978
3274-30

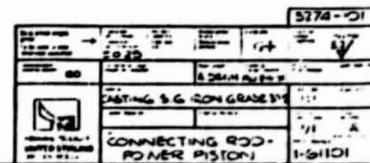
ORIGINAL PAGE IS
OF POOR QUALITY



Crankcase and Bedplate Assembly
(Side View)

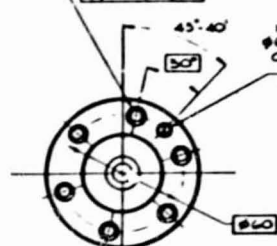


REMOVE ALL BURRS & SHARP EDGES
GENERAL CORNER RADIUS 3
MAX. DRAW ANGLE 2°

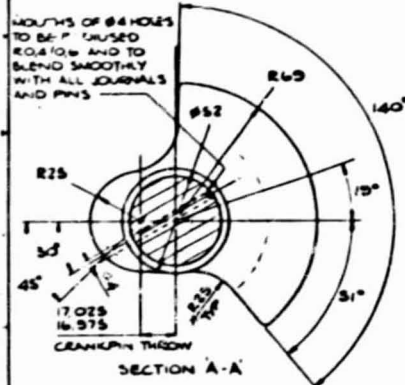




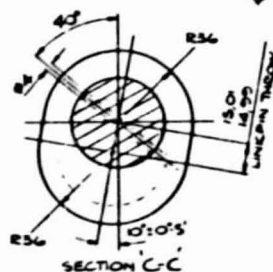
6 HOLES
M8 x 1.25 - 6H THRD
CSC 45° ± 45°
EQUISPACED
P.O.2 A-B



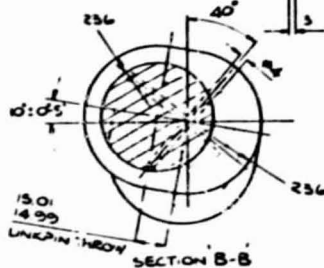
REAR END
BACKGROUND DETAIL OMITTED FOR CLARITY



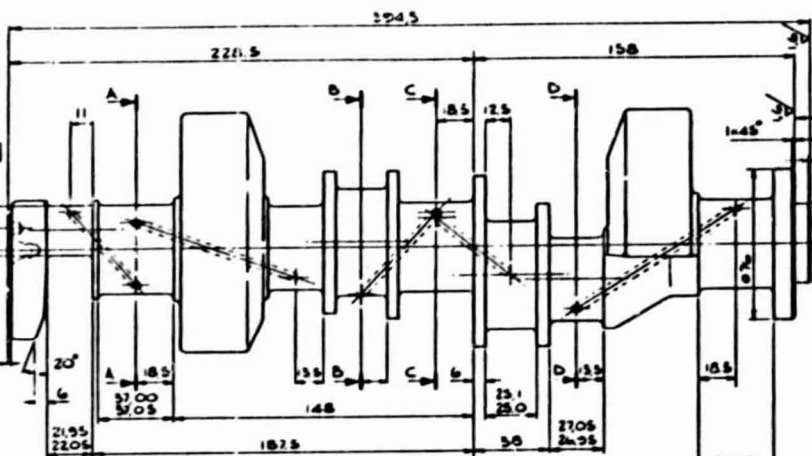
SECTION A-A



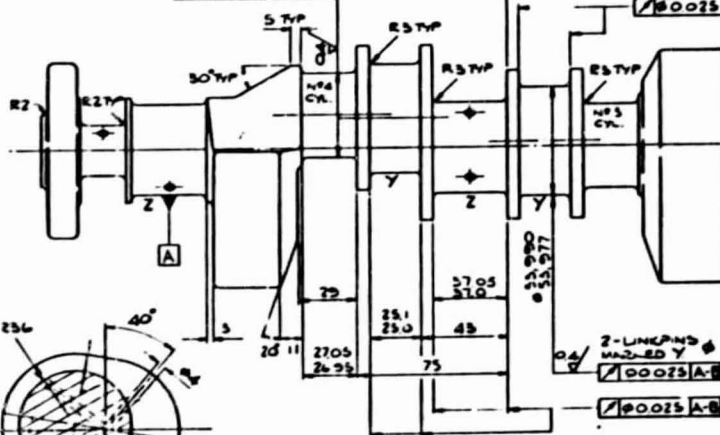
SECTION C-C



SECTION B-B



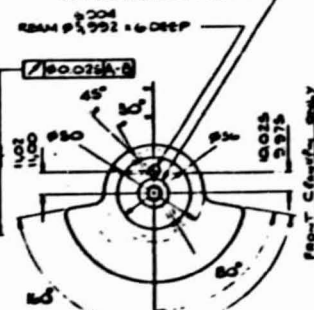
2-CRANKPINS MARKED X
43.000 (14)
41.904 (14)



IT IS IMPORTANT THAT A TRUE RADIUS IS MAINTAINED WITH A SMOOTH BLEND
NITROGEN CHARGE ON ALL CRANKS & JOURNALS
CRANKSHAFT TO BE DYNAMICALLY BALANCED TO WITHIN 20 GRAMME
CENTIMETRES WHEN SUPPORTED AT EACH END MAIN JOURNAL
REMOVE ALL BURRS & SHARP CORNERS

0.0007 ALL CRANKPINS, LINKPINS & JOURNALS
0.0007

DRILL 6.0 x 15 DEEP MAX
TAP M8 x 1.25 - 6H x 12 DEEP
CSC TO 6.15 ± 60° PDC



FRONT END
BACKGROUND DETAIL OMITTED FOR CLARITY

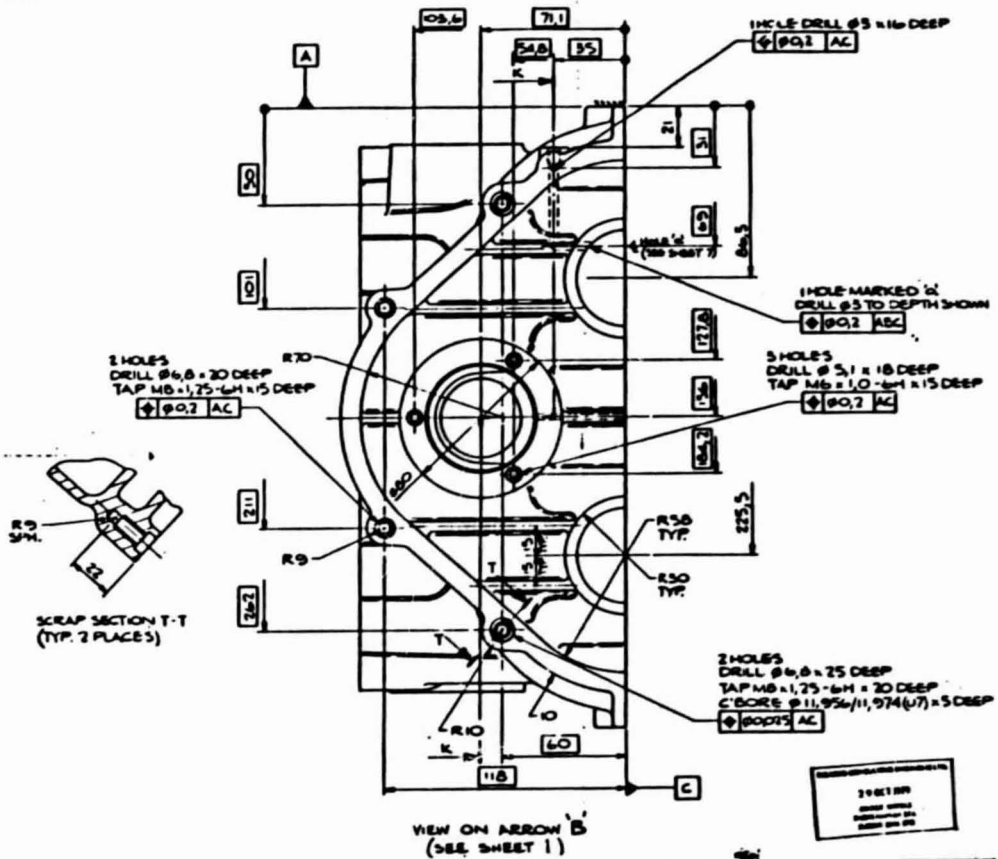
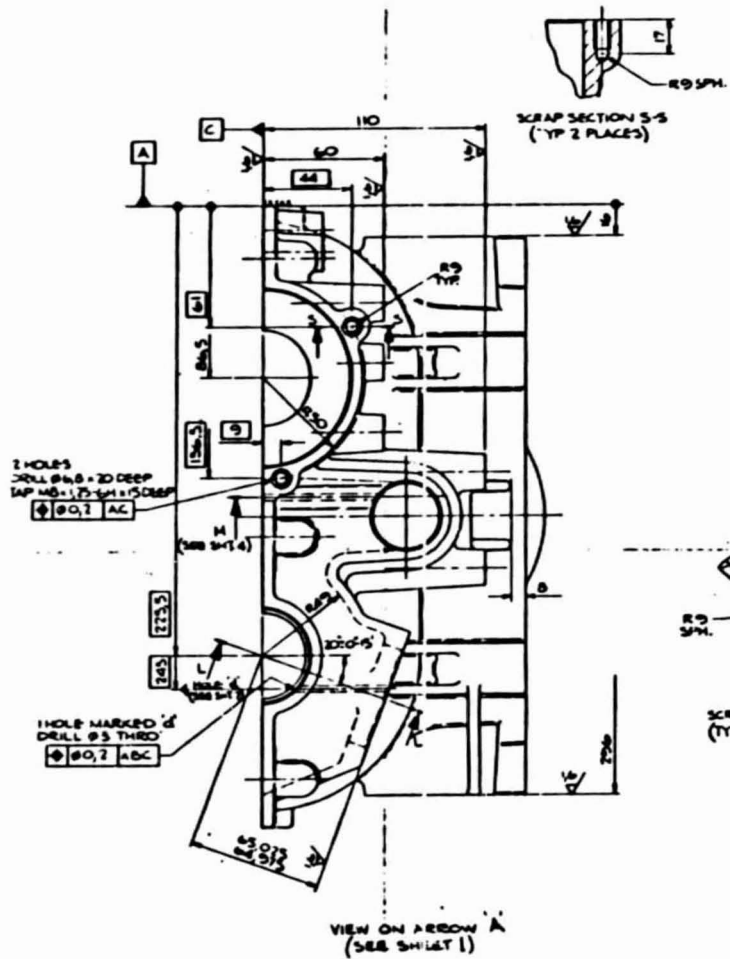
3-JOURNALS MARKED Z
100.025 A-B

MATERIAL -
BS 970 PART 2 1970 722M 24 (EN 40B) 5% CHROMIUM
MANGANESE NITRIDING STEEL. HARDEN & TEMPER AS Y
CONDITION TENSILE STRENGTH 55 TONS/IN². HARDNESS 240
302 BRINELL NITRIDE ALL OVER EXCEPT WHERE SHOWN.
DEPTH OF CASE 0.5 HARDNESS 677 CASEHARDEN

IT IS ESSENTIAL THAT THE CRANKPINS & MAIN JOURNALS
BE FINISH GROUND AFTER NITRIDING BEHIND WHEEL
ROTATION TO LAY TRAILING SURFACE TRAP

5276-113	
SEE ABOVE	111
CRANKSHAFT -	
Nº 36 & CYLINDERS 1-6 1113	

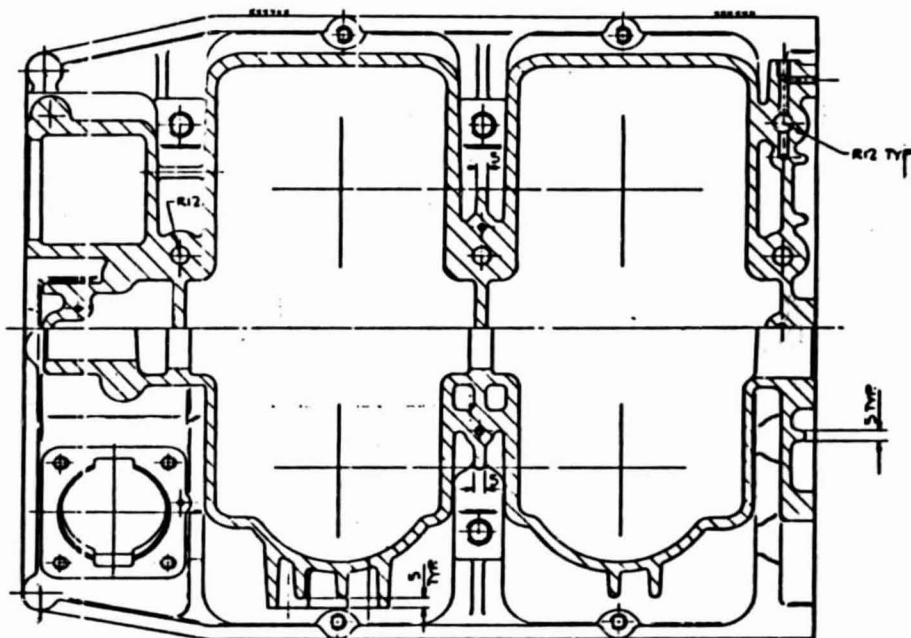
ORIGINAL PAGE IS
OF POOR QUALITY



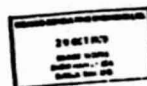
SHEET 2 OF 7 SHEETS

SHEET 2 OF 7 SHEETS		3274-116	
DATE 08/03/93	TIME 04:00	LOCATION G4	STATUS V
REMARKS A-1000	A-1000	A-1000	A-1000
CRANKCASE		217	
		1-Callie	

ORIGINAL PAGE IS
OF POOR QUALITY

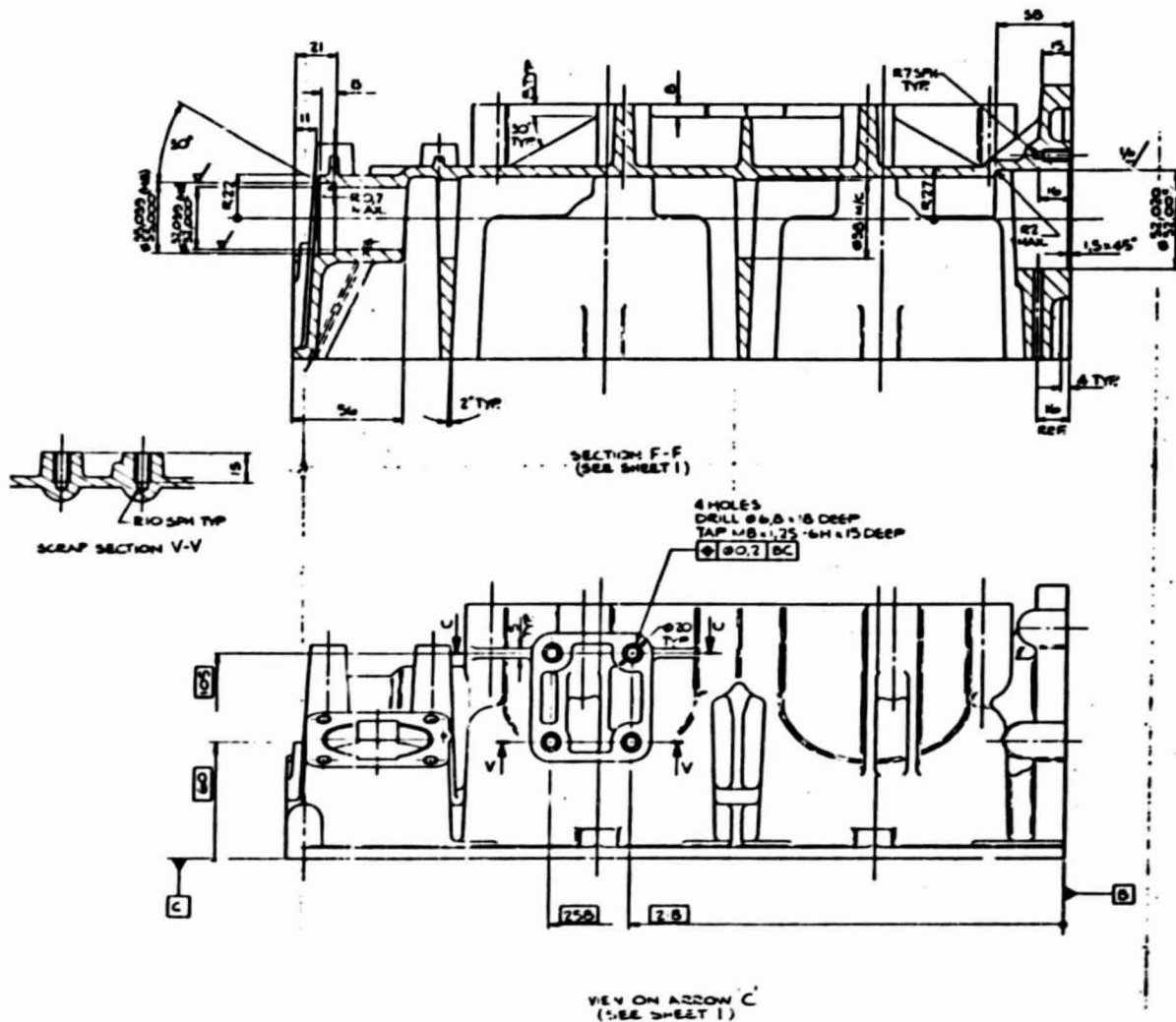


SECTION K-K
(SEE SHEET 2)



SHEET 3 OF 7 SHEETS		5774-116
DATE	BY	121
10/1/60	A. C. C. C.	3/7 E
CRANKCASE		1-61116

ORIGINAL PAGE IS
OF POOR QUALITY



SHEET 4 OF 7 SHEETS

276-116

DESIGN	DATE	BY	CHECKED
CRANKCASE	1-6-11	417	




111-325

TYP 4 PLACES
SCALE 10:1

49.01
- \$45.00 FINISH MACHINE WHEN
ASSEMBLED WITH DEOPLATE
SEE DRG NO 61118 (5274-118)
(TYPICAL 6 PLACES)

8 HOLES
DRILL $\varnothing 2.8 \times 18$ DEEP
TAP M8 $\times 1.25 \times 15$ DEEP

◆ ● 92 BC

	0,025	C
	0,025	
	0,05/100	

1	0015	AC
0	0015	
	0015	00


IN XE DRILL 4.5 x 60 DEEP
IN Mx 1-6M x 0 DEEP

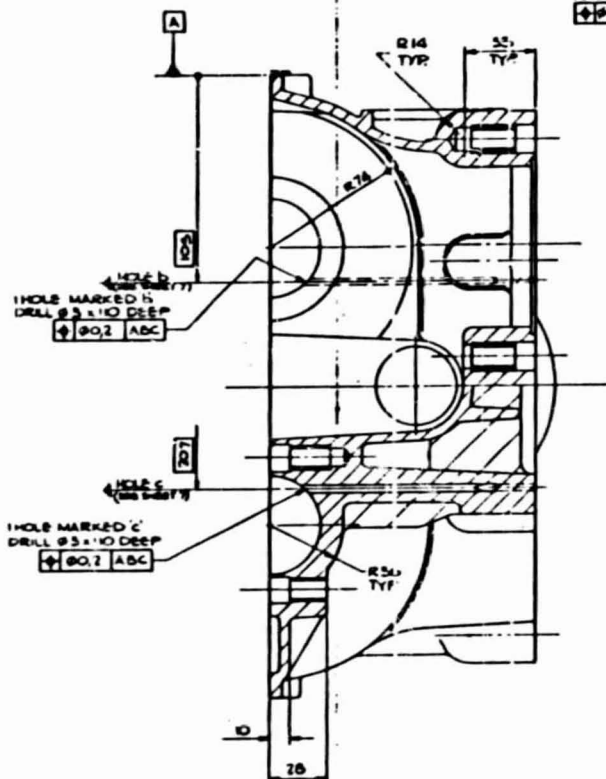
VIEW ON ARROW D
(SEE SHEET 1)

0,325
0,05/100

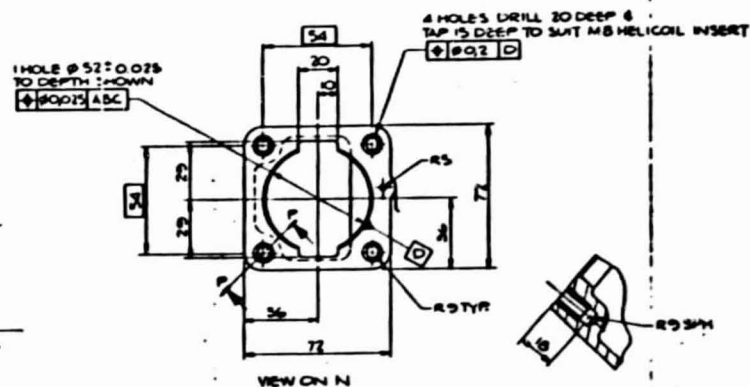
SHEET 5 OF 7 SHEETS

3272-116

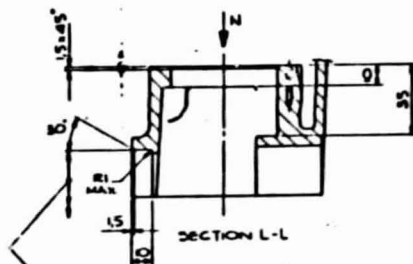
 <p>DEPARTMENT OF THE ENVIRONMENT, PLANNING AND HERITAGE</p>	<p>1. CRANKCASE</p>	<p>2. 5/11/10</p>
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SECTION E-E
(SEE SHEET 1)



VIEW ON N



SECTION L-L

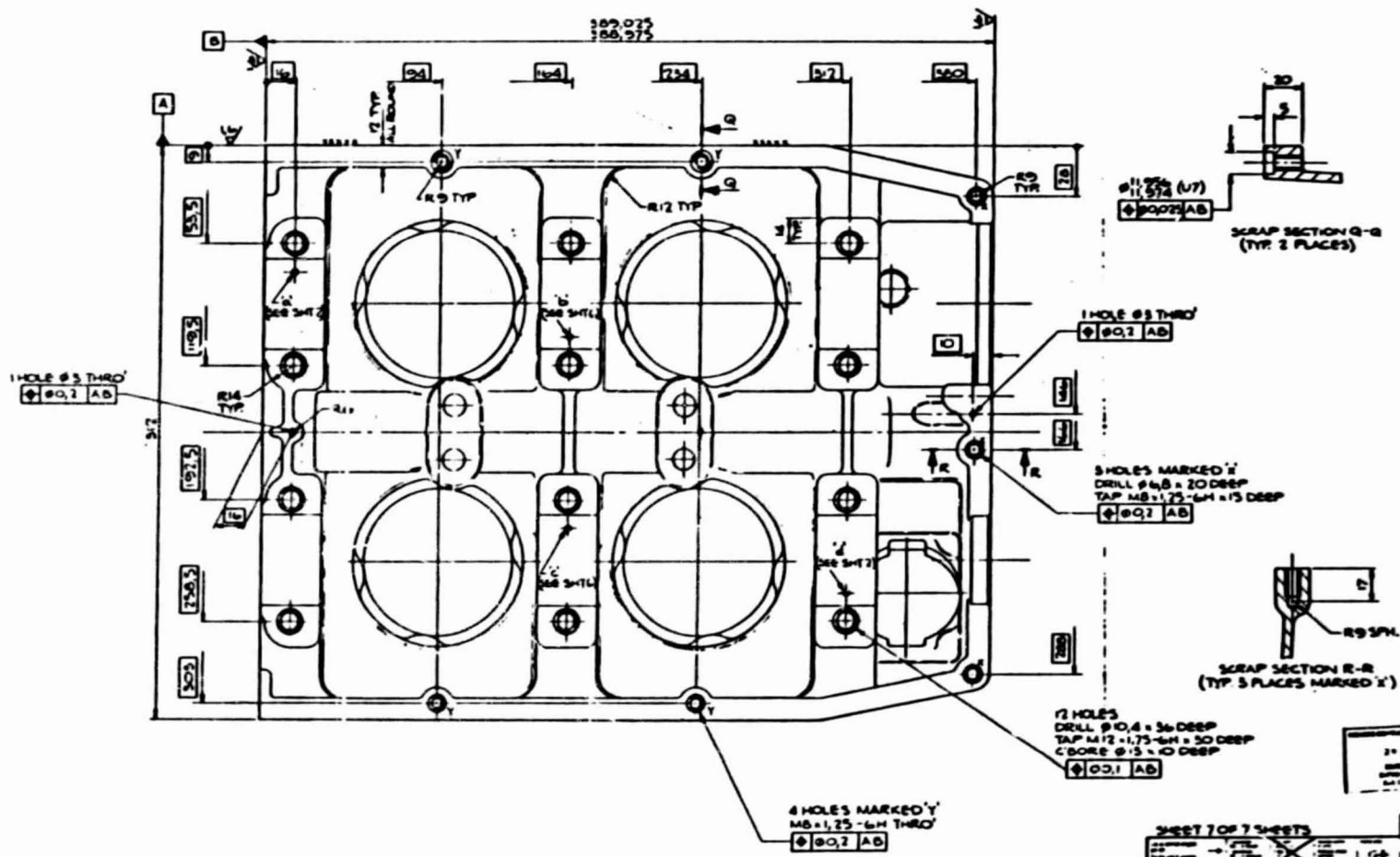
0.400
0.475 FINISH MACHINED WHEN
ASSEMBLED WITH DEOPLATE SEE
DRG NO 61118 (3274-116)



SCRAP SECTION P-P

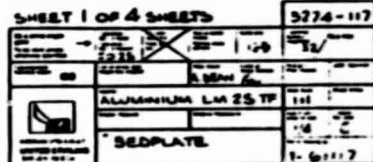
ORIGINAL PAGE IS
OF POOR QUALITY

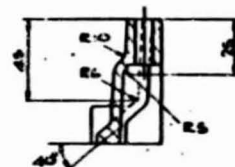
SHEET 6 OF 7 SHEETS		3274-116
<p>3274-116</p> <p>CRANKCASE</p>		<p>1-61116</p>



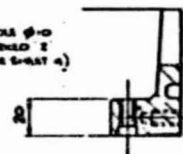
ORIGINAL PAGE IS
OF POOR QUALITY

SHEET 7 OF 7 SHEETS		3241-116
DATE	BY	CHKD
APPROVED	DESIGNED	1.1
7/7	1-6116	
CRANKCASE		

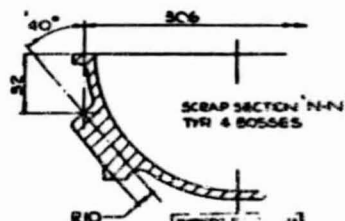




SCRAP SECTION H-H
(SEE SHEET I)



SCRAP SECTION 'J-J'
(SEE SHEET 1)



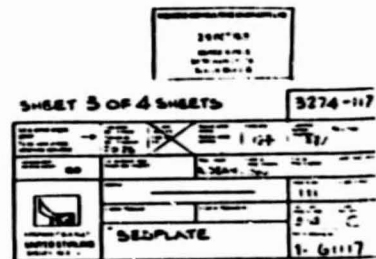
SCRAP SECTION N-N
TYR & BOSSES

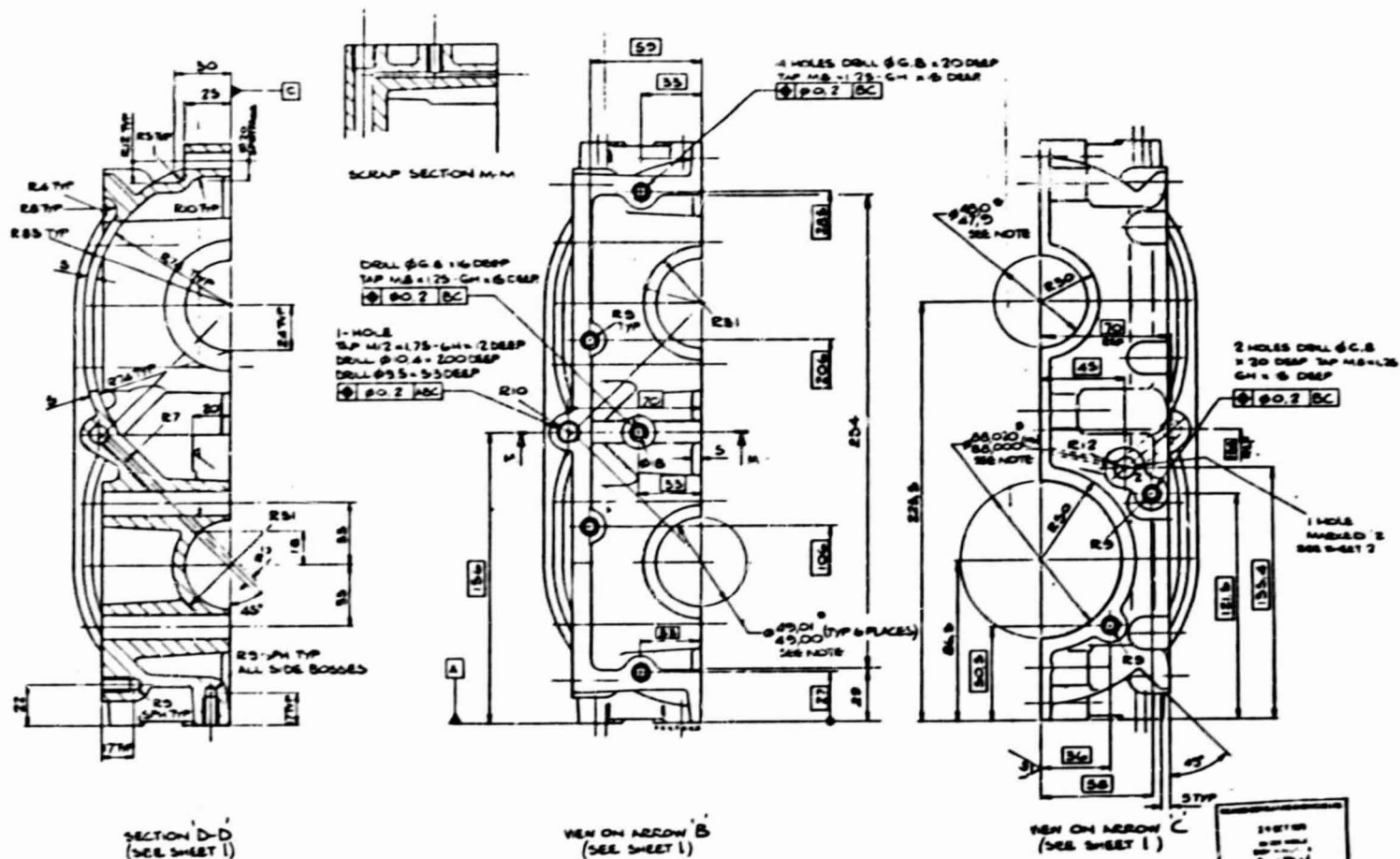
SHEET 2 OF 4 SHEETS

9274-117

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32. <input type="checkbox"/> YES 33. <input type="checkbox"/> NO 34. <input type="checkbox"/> YES 35. <input type="checkbox"/> NO 36. <input type="checkbox"/> YES 37. <input type="checkbox"/> NO 38. <input type="checkbox"/> YES 39. <input type="checkbox"/> NO 40. <input type="checkbox"/> YES 41. <input type="checkbox"/> NO 42. <input type="checkbox"/> YES 43. <input type="checkbox"/> NO 44. <input type="checkbox"/> YES 45. <input type="checkbox"/> NO 46. <input type="checkbox"/> YES 47. <input type="checkbox"/> NO 48. <input type="checkbox"/> YES 49. <input type="checkbox"/> NO 50. <input type="checkbox"/> YES 51. <input type="checkbox"/> NO 52. <input type="checkbox"/> YES 53. <input type="checkbox"/> NO 54. <input type="checkbox"/> YES 55. <input type="checkbox"/> NO 56. <input type="checkbox"/> YES 57. <input type="checkbox"/> NO 58. <input type="checkbox"/> YES 59. <input type="checkbox"/> NO 60. <input type="checkbox"/> YES 61. <input type="checkbox"/> NO 62. <input type="checkbox"/> YES 63. <input type="checkbox"/> NO 64. <input type="checkbox"/> YES 65. <input type="checkbox"/> NO 66. <input type="checkbox"/> YES 67. <input type="checkbox"/> NO 68. <input type="checkbox"/> YES 69. <input type="checkbox"/> NO 70. <input type="checkbox"/> YES 71. <input type="checkbox"/> NO 72. <input type="checkbox"/> YES 73. <input type="checkbox"/> NO 74. <input type="checkbox"/> YES 75. <input type="checkbox"/> NO 76. <input type="checkbox"/> YES 77. <input type="checkbox"/> NO 78. <input type="checkbox"/> YES 79. <input type="checkbox"/> NO 80. <input type="checkbox"/> YES 81. <input type="checkbox"/> NO 82. <input type="checkbox"/> YES 83. <input type="checkbox"/> NO 84. <input type="checkbox"/> YES 85. <input type="checkbox"/> NO 86. <input type="checkbox"/> YES 87. <input type="checkbox"/> NO 88. <input type="checkbox"/> YES 89. <input type="checkbox"/> NO 90. <input type="checkbox"/> YES 91. <input type="checkbox"/> NO 92. <input type="checkbox"/> YES 93. <input type="checkbox"/> NO 94. <input type="checkbox"/> YES 95. <input type="checkbox"/> NO 96. <input type="checkbox"/> YES 97. <input type="checkbox"/> NO 98. <input type="checkbox"/> YES 99. <input type="checkbox"/> NO 100. <input type="checkbox"/> YES		1. <input type="checkbox"/> NO 2. <input type="checkbox"/> YES 3. <input type="checkbox"/> NO 4. <input type="checkbox"/> YES 5. <input type="checkbox"/> NO 6. <input type="checkbox"/> YES 7. <input type="checkbox"/> NO 8. <input type="checkbox"/> YES 9. <input type="checkbox"/> NO 10. <input type="checkbox"/> YES 11. <input type="checkbox"/> NO 12. <input type="checkbox"/> YES 13. <input type="checkbox"/> NO 14. <input type="checkbox"/> YES 15. <input type="checkbox"/> NO 16. <input type="checkbox"/> YES 17. <input type="checkbox"/> NO 18. <input type="checkbox"/> YES 19. <input type="checkbox"/> NO 20. <input type="checkbox"/> YES 21. <input type="checkbox"/> NO 22. <input type="checkbox"/> YES 23. <input type="checkbox"/> NO 24. <input type="checkbox"/> YES 25. <input type="checkbox"/> NO 26. <input type="checkbox"/> YES 27. <input type="checkbox"/> NO 28. <input type="checkbox"/> YES 29. <input type="checkbox"/> NO 30. <input type="checkbox"/> YES 31. <input type="checkbox"/> NO 32. <input type="checkbox"/> YES 33. <input type="checkbox"/> NO 34. <input type="checkbox"/> YES 35. <input type="checkbox"/> NO 36. <input type="checkbox"/> YES 37. <input type="checkbox"/> NO 38. <input type="checkbox"/> YES 39. <input type="checkbox"/> NO 40. <input type="checkbox"/> YES 41. <input type="checkbox"/> NO 42. <input type="checkbox"/> YES 43. <input type="checkbox"/> NO 44. <input type="checkbox"/> YES 45. <input type="checkbox"/> NO 46. <input type="checkbox"/> YES 47. <input type="checkbox"/> NO 48. <input type="checkbox"/> YES 49. <input type="checkbox"/> NO 50. <input type="checkbox"/> YES 51. <input type="checkbox"/> NO 52. <input type="checkbox"/> YES 53. <input type="checkbox"/> NO 54. <input type="checkbox"/> YES 55. <input type="checkbox"/> NO 56. <input type="checkbox"/> YES 57. <input type="checkbox"/> NO 58. <input type="checkbox"/> YES 59. <input type="checkbox"/> NO 60. <input type="checkbox"/> YES 61. <input type="checkbox"/> NO 62. <input type="checkbox"/> YES 63. <input type="checkbox"/> NO 64. <input type="checkbox"/> YES 65. <input type="checkbox"/> NO 66. <input type="checkbox"/> YES 67. <input type="checkbox"/> NO 68. <input type="checkbox"/> YES 69. <input type="checkbox"/> NO 70. <input type="checkbox"/> YES 71. <input type="checkbox"/> NO 72. <input type="checkbox"/> YES 73. <input type="checkbox"/> NO 74. <input type="checkbox"/> YES 75. <input type="checkbox"/> NO 76. <input type="checkbox"/> YES 77. <input type="checkbox"/> NO 78. <input type="checkbox"/> YES 79. <input type="checkbox"/> NO 80. <input type="checkbox"/> YES 81. <input type="checkbox"/> NO 82. <input type="checkbox"/> YES 83. <input type="checkbox"/> NO 84. <input type="checkbox"/> YES 85. <input type="checkbox"/> NO 86. <input type="checkbox"/> YES 87. <input type="checkbox"/> NO 88. <input type="checkbox"/> YES 89. <input type="checkbox"/> NO 90. <input type="checkbox"/> YES 91. <input type="checkbox"/> NO 92. <input type="checkbox"/> YES 93. <input type="checkbox"/> NO 94. <input type="checkbox"/> YES 95. <input type="checkbox"/> NO</	
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III-351

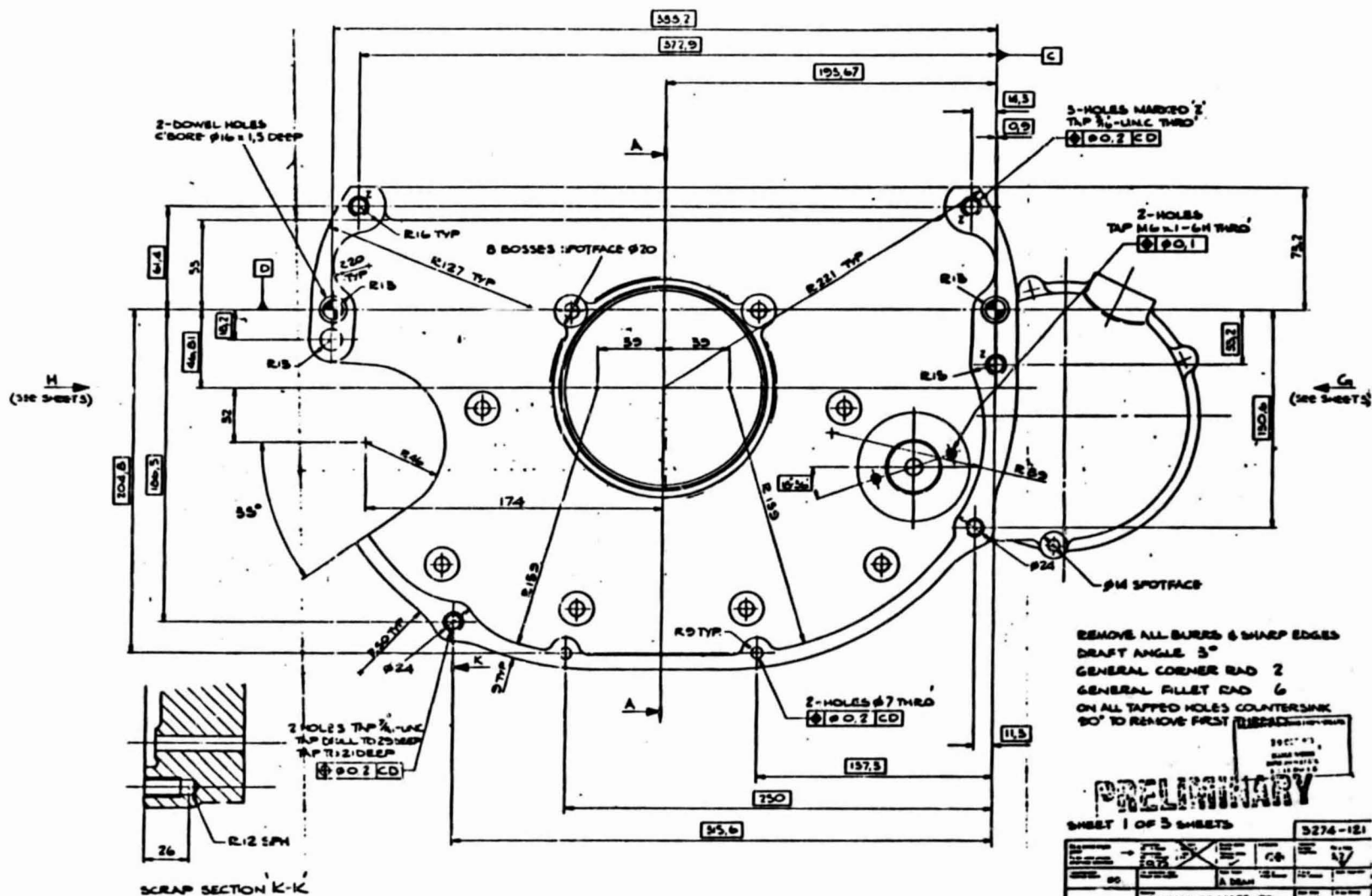




ORIGINAL PAGE 19
OF POOR QUALITY

SHEET 4 OF 4 SHEETS		3274-117
DATE	1-6-11-7	
BY		
CHECKED BY		
APPROVED BY		
BEDPLATE		1-6-11-7

ORIGINAL PAGE IS
OF POOR QUALITY



111-333

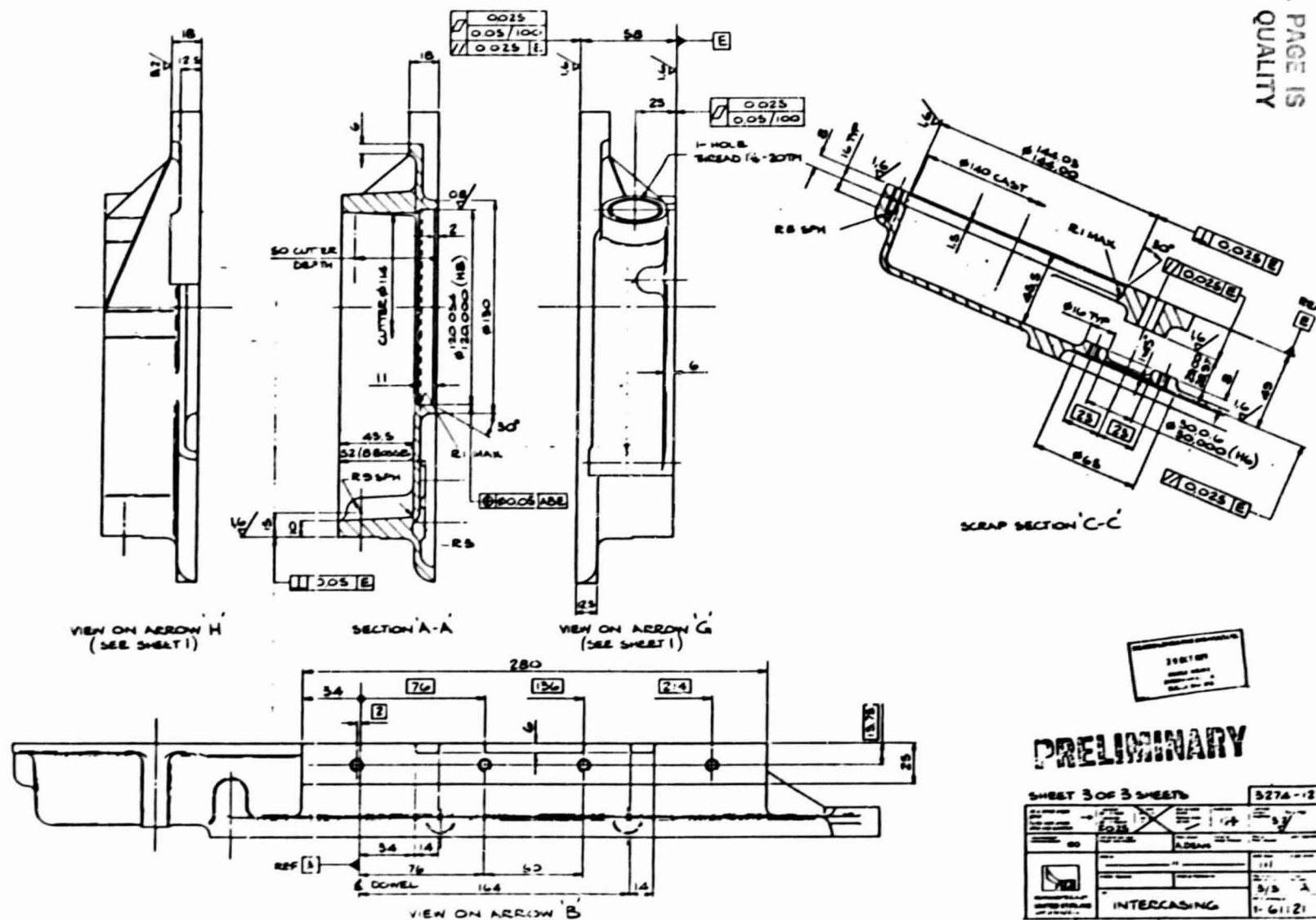


SHEET 2 OF 3 SHEETS

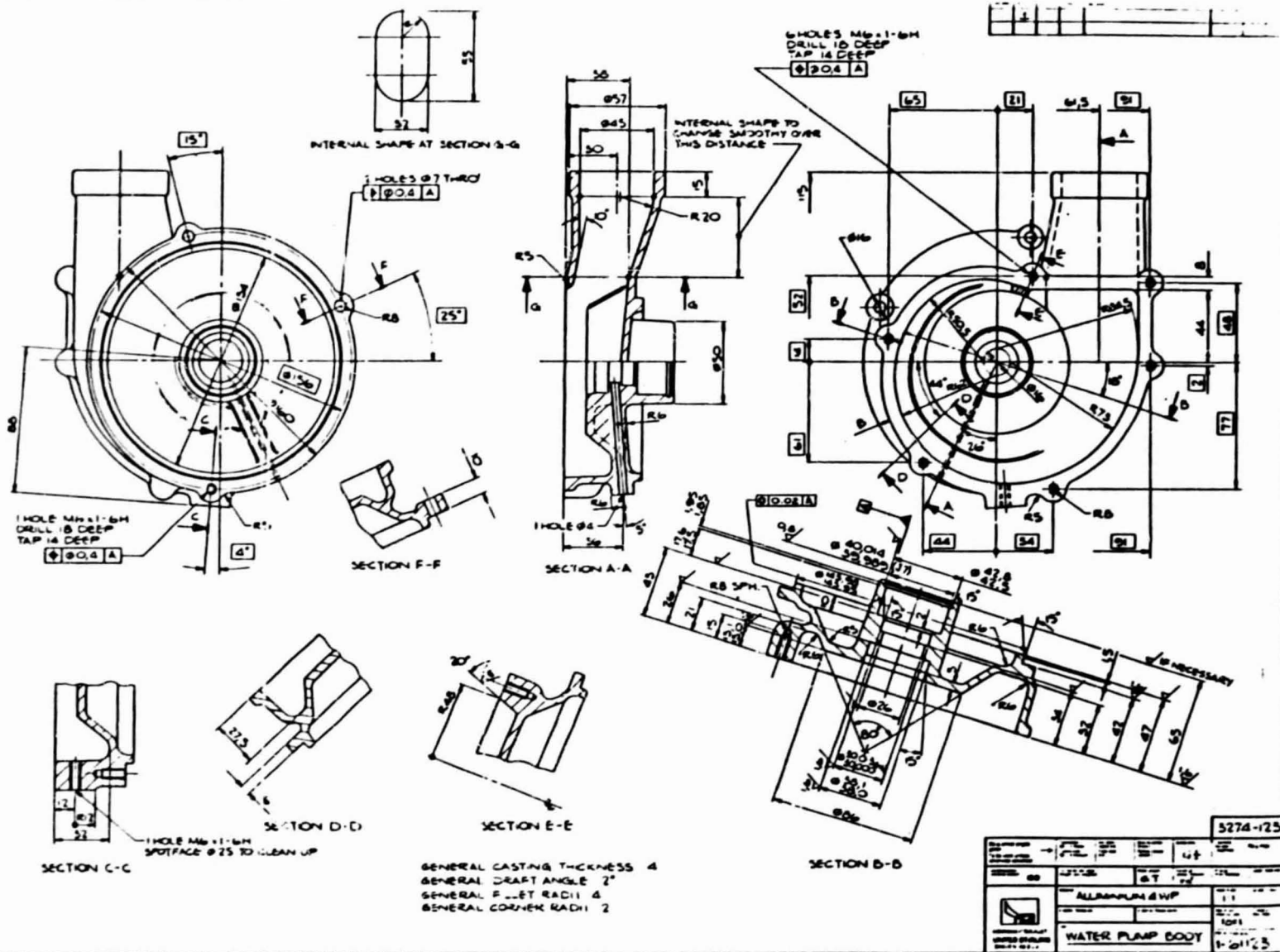
5274-121

[illegible]

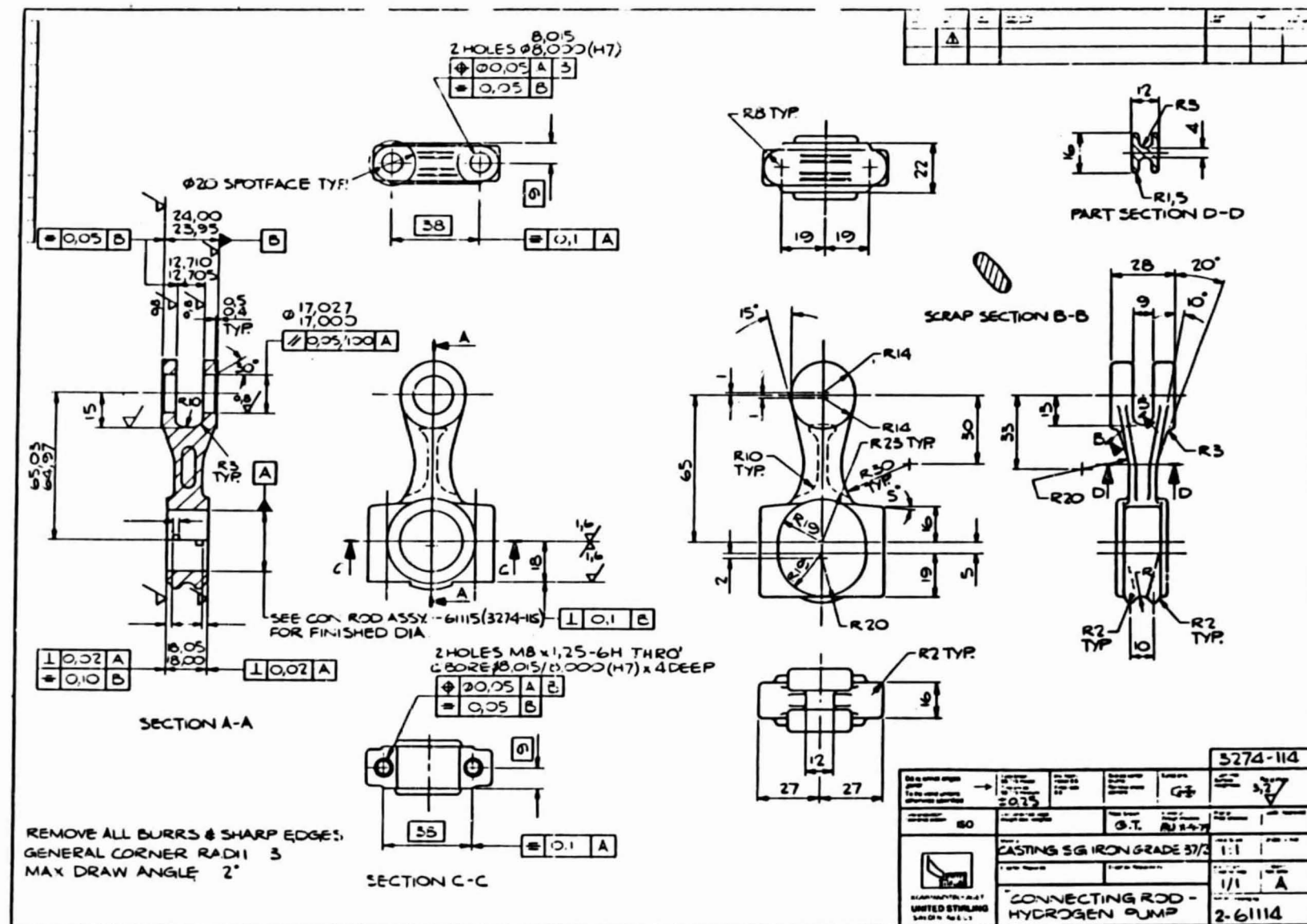
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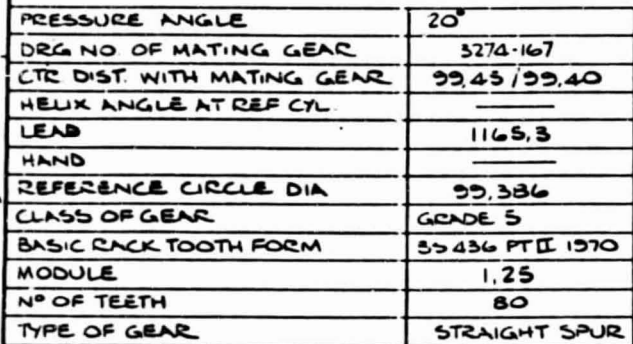


111-335

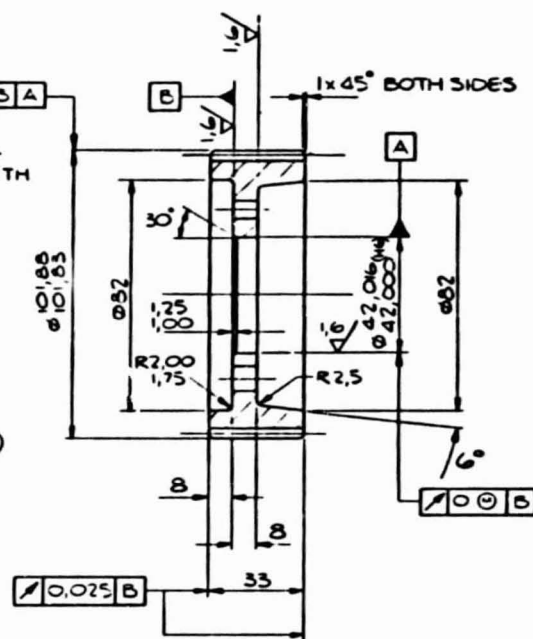


ORIGINAL PAGE IS
OF POOR QUALITY





GEAR TO BE CROWNED
5.2/ UNLESS SHOWN OTHERWISE
REMOVE ALL BURRS & SHARP EDGES




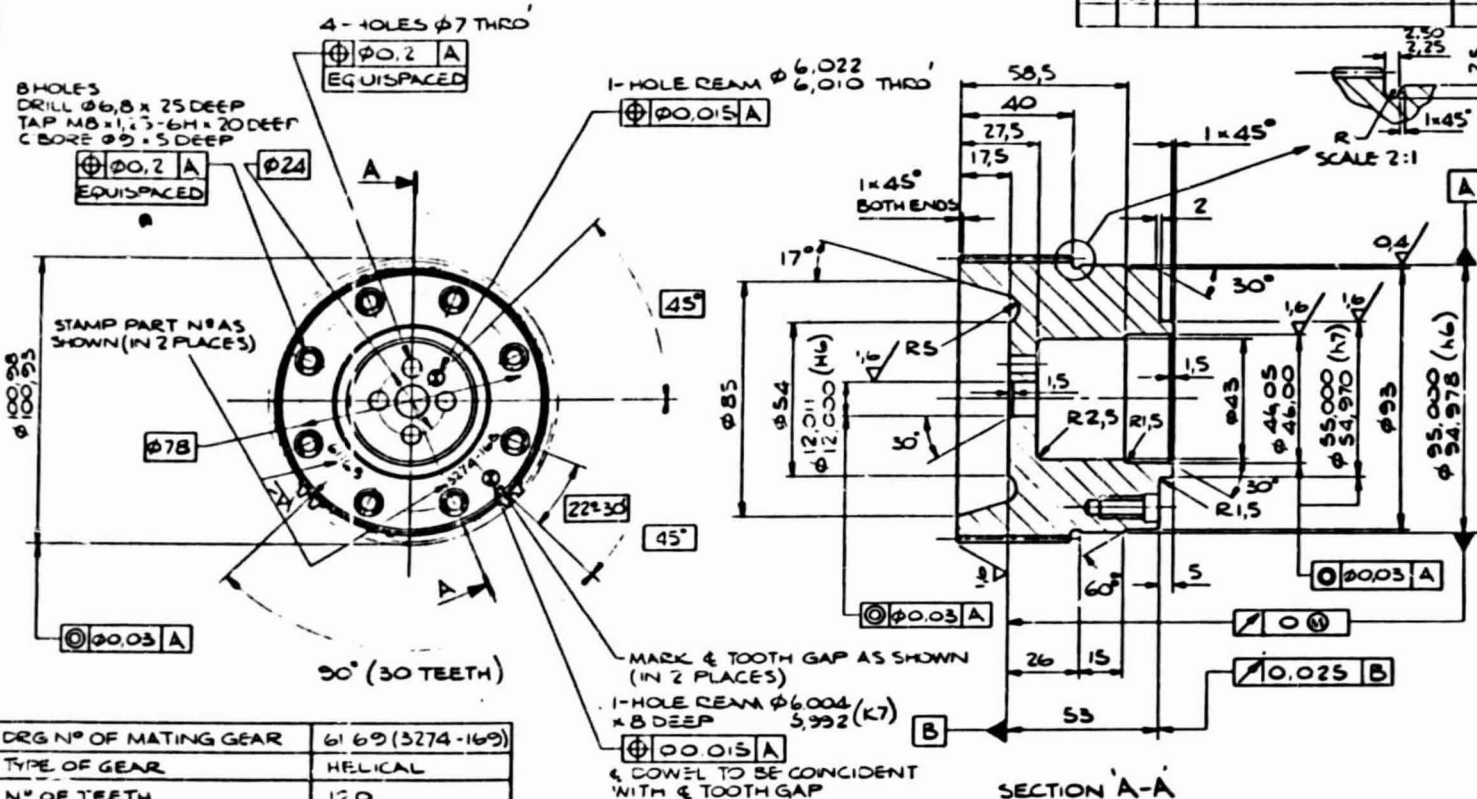
ORIGINAL PAGE IS
OF POOR QUALITY

TYPE OF GEAR	STRAIGHT SPUR
Nº OF TEETH	80
MODULE	1.25
BASIC RACK TOOTH FORM	25 45 5 P.T. 1970
CLASS OF GEAR	GRADE 3
REFERENCE CIRCLE DIA.	99.36
HAND	
LEAD	116.5
HELIX ANGLE AT REF. CY.	
CTR DIST. WITH MATING GEAR	99.45 / 99.40
ORG. Nº OF MATING GEAR	6 122 1827 111001
ADDENDUM MOD. COEFF.	
BACKLASH	
CHORDAL THICKNESS AT RCD	
CHORDAL ADDENDUM AT RCD	
SPAN GAUGE DIMS	TEETH

SECTION A-A

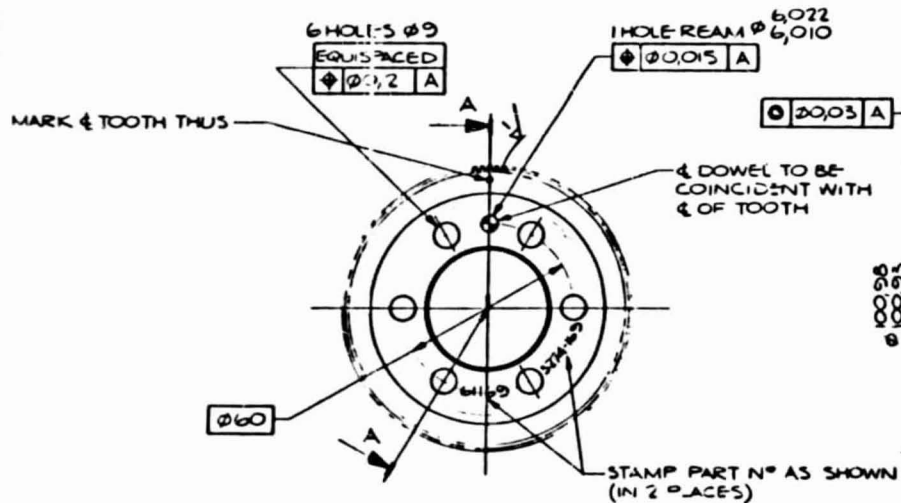
REMOVE ALL BURRS & SHARP EDGES
MACHINE $\sqrt[3.2]{}$ UNLESS OTHERWISE STATED

3274-167					
Fuel pump engine 1-100 1-100	1-100 1-100	1-100 1-100	1-100 1-100	1-100 1-100	1-100 1-100
150	GT	GT	GT	GT	GT
 UNITED STILLINGS	STRAIGHT FOUR GEAR CRANKS-FAST				1/1 A 2-601157

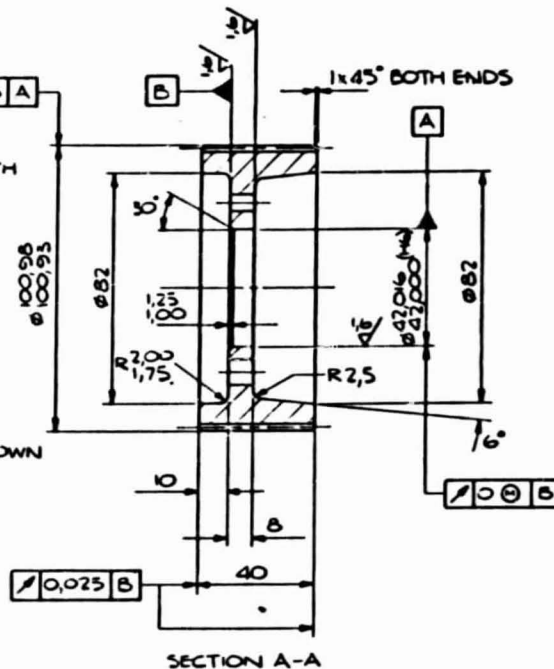


DRG N° OF MATING GEAR	61 69 (3274-169)
TYPE OF GEAR	HELICAL
N° OF TEETH	120
MODULE	0,8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE D/A	92,396
HAND	L.H.
LEAD	11,53
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	99,45/99,40
ADDENDUM MOD COEFF	NIL
BACKLASH	

527J-163	
SEE 53570 PT 3 1571 CONSTRUCTION (MATERIALS) 1571	1571
HELICAL GEAR- DRIVESHAFT	2-61163



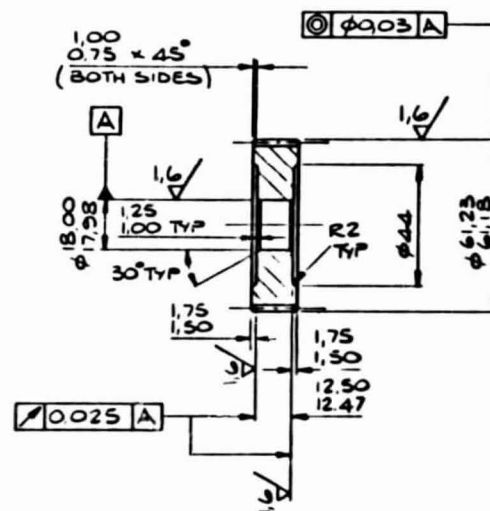
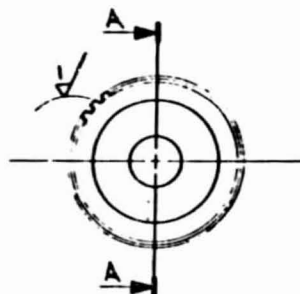
TYPE OF GEAR	HELICAL
Nº OF TEETH	120
MODULE	0,8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE DIA	99,386
HAND	R.H.
LEAD	1165,3
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	92,45/99,40
DRG Nº OF MATING GEAR	6-168 (3274-168)
ADDENDUM MOD COEFF	NIL
BACKLASH	
CHORDAL THICKNESS AT RCD	
CHORDAL ADDENDUM AT RCD	
SPAN GAUGE DIMY	TEETH



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OF POOR QUALITY

3274-169

USE IN OTHER DESIGNS	DATE	BY	CHKD	APPD
FOR REVISIONS	0,25			
60				
		55-55970 PT 3 1971 55970 (55970) CHANGED & 55970		
HELICAL GEAR - CRANKSHAFT		1/1 A 2-61169		



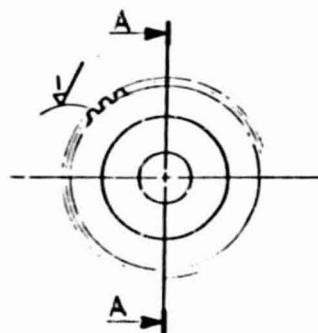
SECTION A-A

REMOVE ALL BURRS & SHARP EDGES
THIS PART TO BE ASSEMBLED WITH BEARING
BUSHES, SEE DRG NO 61174 (3274-174)

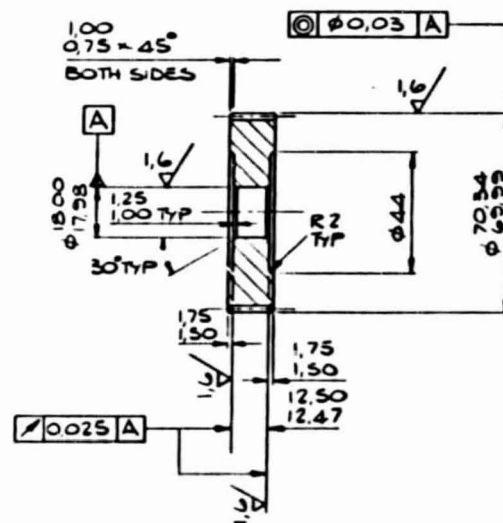
TYPE OF GEAR	HELICAL
N° OF TEETH	72
MODULE	0.8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE S
REFERENCE CIRCLE DIA.	59.632
HAND	L.H
LEAD	701.00
HELIX ANGLE AT REF CYL	15°
CTR DIST WITH MATING GEAR	CRANKSHAFT :- 75.52 WATER PUMP :- 93.16
DRG N° OF MATING GEARS	CONKSHAFT :- 61163/3274-1163 WATER PUMP :- 61172/3274-1172
ADDENDUM MOD. COEFF	NIL
BACKLASH	
PRESSURE ANGLE	20°

3274-170	
ISO	3274-170
TUFNOL - CARP BRAND	111
HELICAL IDLER GEAR	1/1 A
72-TEETH - (3000 REV/MIN)	2-61170

ORIGINAL PAGE IS
OF POOR QUALITY



TYPE OF GEAR	HELICAL
N° OF TEETH	83
MODULE	0.8
BASIC RACK TOOTH FORM	BS 436 PT II 1970
CLASS OF GEAR	GRADE 5
REFERENCE CIRCLE DIA.	68.742
HAND	L. H.
LEAD	807.22
HELIX ANGLE AT REF. CYL	15°
CTR DIST WITH MATING GEAR	88.62
DRG N° OF MAT'NG GEAR	61173 (3274-173)
ADDENDUM MOD COEFF	NIL
BACKLASH	
PRESSURE ANGLE	20°



SECTION A-A

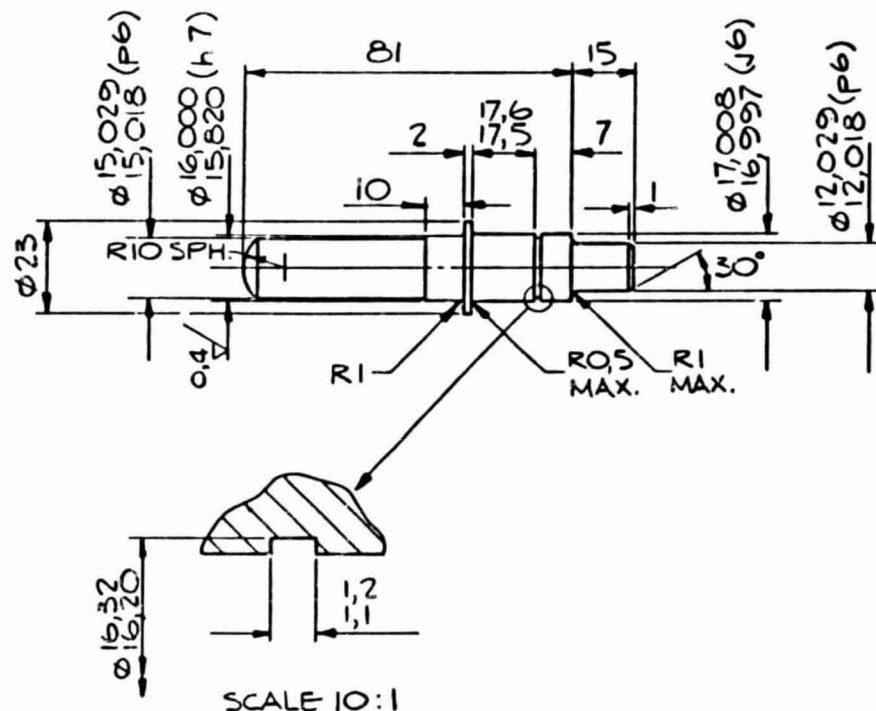
REMOVE ALL BURRS & SHARP EDGES
THIS BEARING TO BE ASSEMBLED WITH
BEARING BUSHES. SEE DRG NO. 61174 (3274-174)

					3274-171
On to serial stamp For the above stamp on the next page	→ 1.00				

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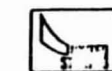
MACHINE ALL OVER $\frac{1}{16}$ EXCEPT WHERE OTHERWISE SHOWN

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1. Sheet	2. Rev.	3. Date	4. Title	5. Author	6. Date	7. Date	8. Date

Oil and grease gallies To be used unless otherwise specified	1. Unit 2. Unit 3. Unit	4. Unit 5. Unit 6. Unit	7. Unit 8. Unit 9. Unit	10. Unit 11. Unit 12. Unit	13. Unit 14. Unit 15. Unit	16. Unit 17. Unit 18. Unit	19. Unit 20. Unit 21. Unit
ISO	1. Unit 2. Unit 3. Unit	4. Unit 5. Unit 6. Unit	7. Unit 8. Unit 9. Unit	10. Unit 11. Unit 12. Unit	13. Unit 14. Unit 15. Unit	16. Unit 17. Unit 18. Unit	19. Unit 20. Unit 21. Unit
STEEL B5 970 212 M 36 (EN 5 M) NORM	1. Unit 2. Unit 3. Unit	4. Unit 5. Unit 6. Unit	7. Unit 8. Unit 9. Unit	10. Unit 11. Unit 12. Unit	13. Unit 14. Unit 15. Unit	16. Unit 17. Unit 18. Unit	19. Unit 20. Unit 21. Unit
SHAFT - WATER PUMP	1. Unit 2. Unit 3. Unit	4. Unit 5. Unit 6. Unit	7. Unit 8. Unit 9. Unit	10. Unit 11. Unit 12. Unit	13. Unit 14. Unit 15. Unit	16. Unit 17. Unit 18. Unit	19. Unit 20. Unit 21. Unit

3274-125



KOMMANDITGESELLSCHAFT
UNITED STIRLING
15 DECEMBER 1960

SHAFT - WATER PUMP

3-61125

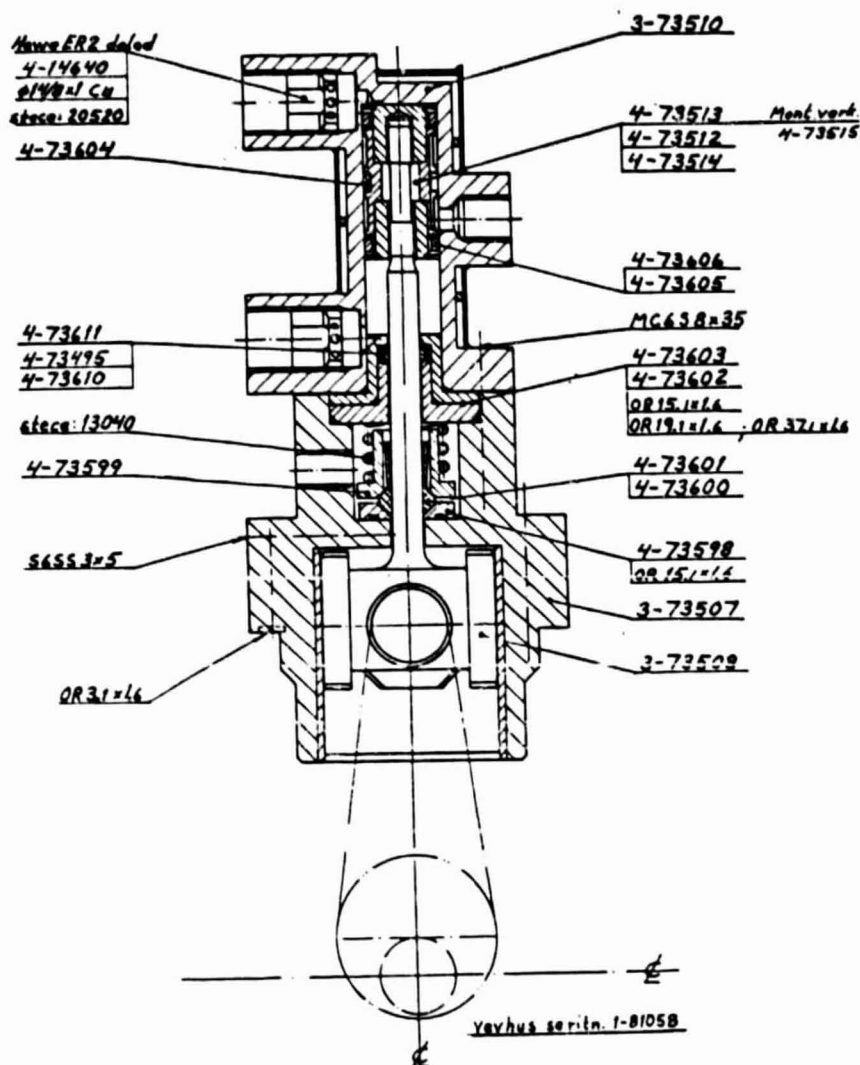
Control System and Auxiliaries

C.8 Drawings

ASE MDD I, Control System and Auxiliaries

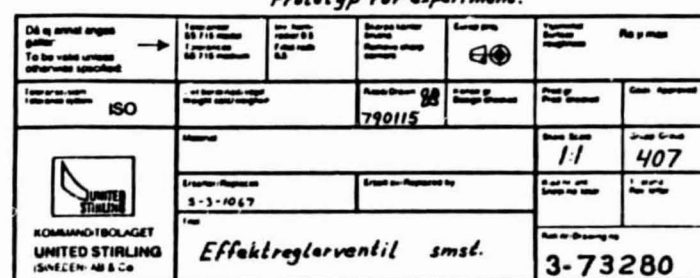
- For power control sub-systems, preliminary layout alternatives are presented only. For external gas system (part of), see section 6:2.
- For overall auxiliary arrangement reference is made to section 2:2 or 9:2. Also some system components, to be mounted on the vehicle body, are not yet located.
- Sub-system Layouts (preliminary)
 - 3-73506 Hydrogen Compressor (test assy)
 - 3-73280 Power Control Valve (test unit)
 - 1-S-1328 Power Control Block I
 - 2-S-1331 Power Control Block II
 - 3274-39 Rear End and Water Pump Arr. (2 sheets)
 - 1-17046 Burner Air Blower

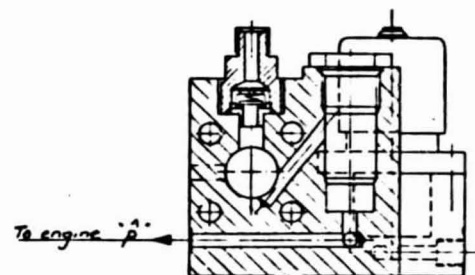
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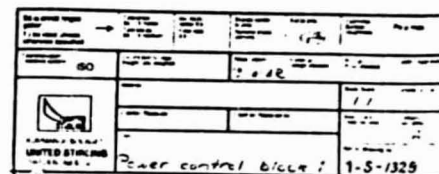
Prototyp för experiment:

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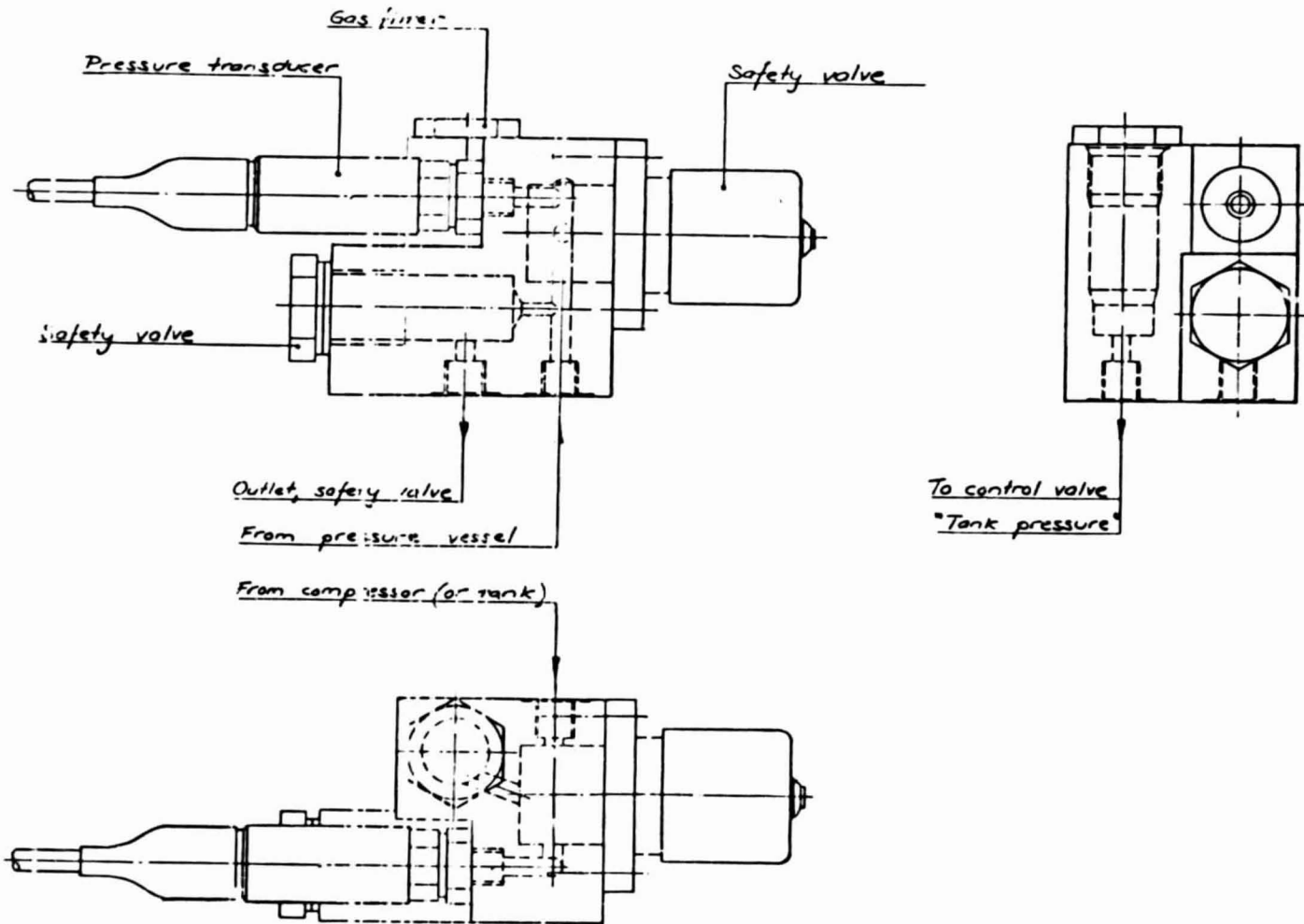




E-M



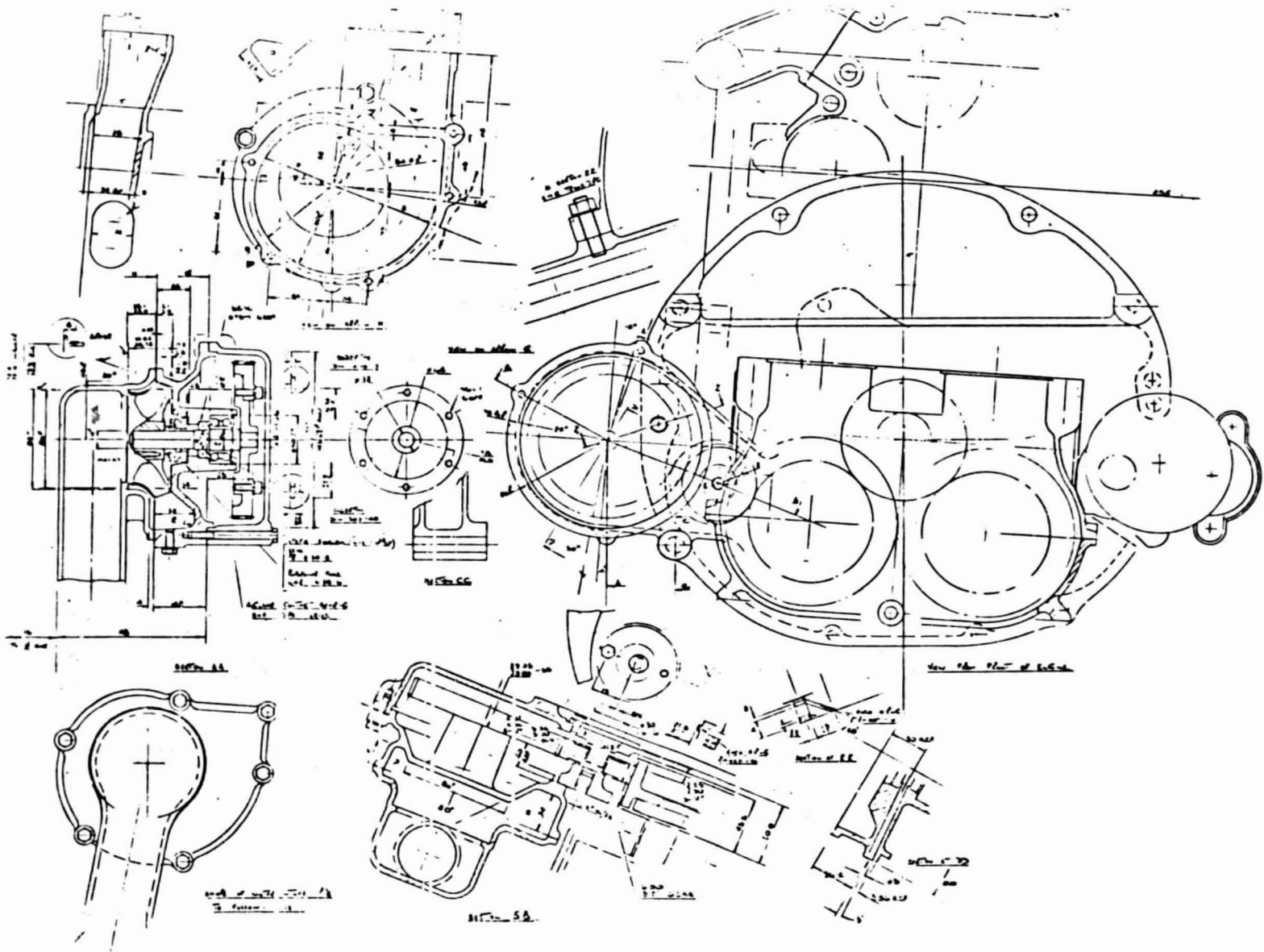
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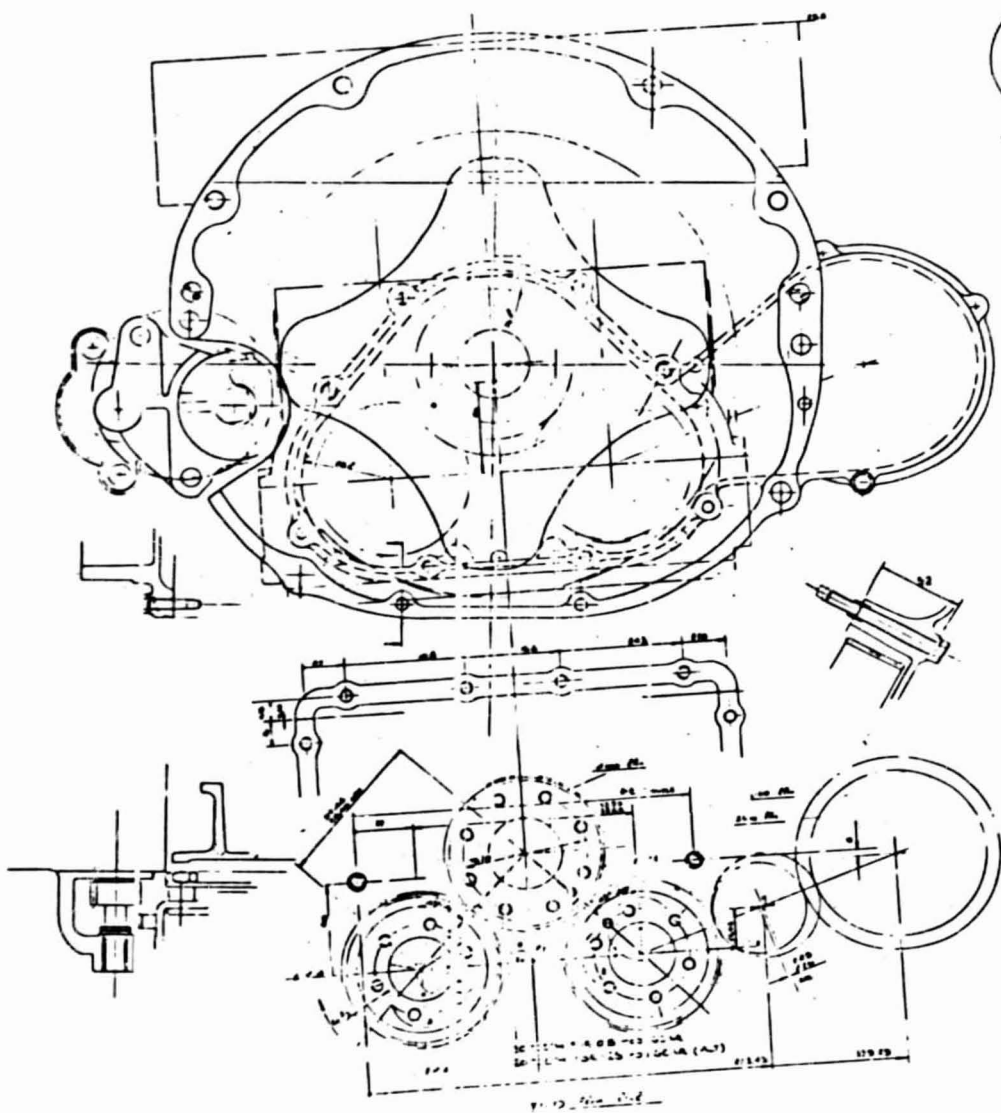


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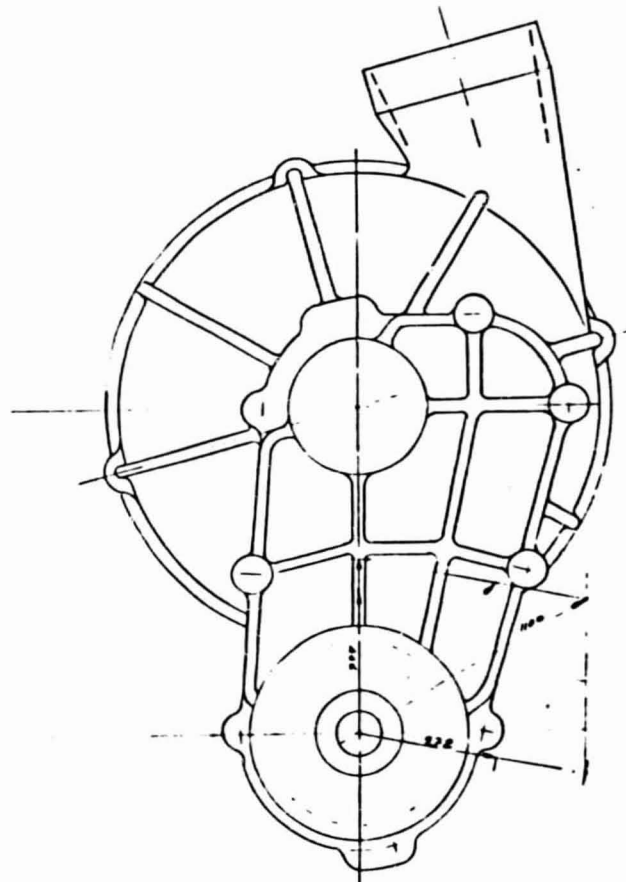
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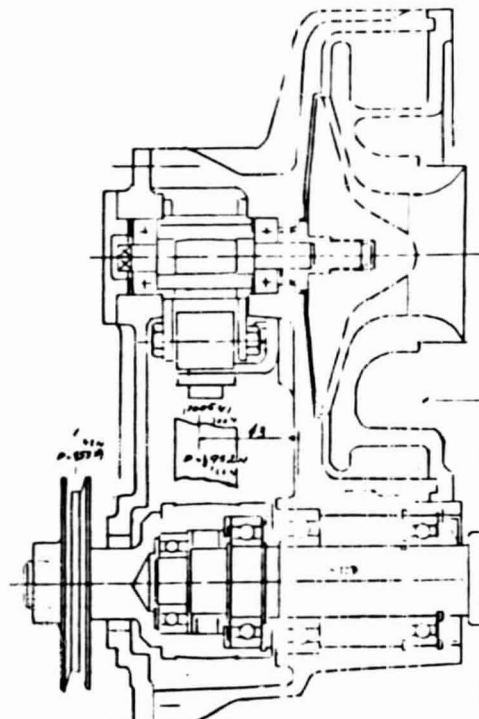
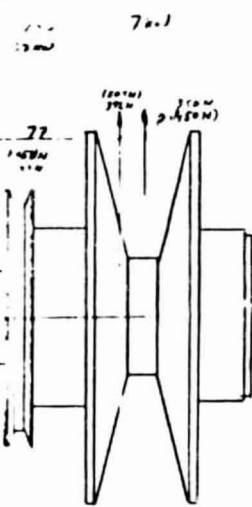
111-353

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Preliminary

 UNITED STATES NAVY		Bureau of Naval Ordnance Division of Naval Armaments	
Project No. 100-1000000 Drawing No. 100-1000000-100		Date 1-1-45	



III-354

Vehicle Integration

c.9 Drawings

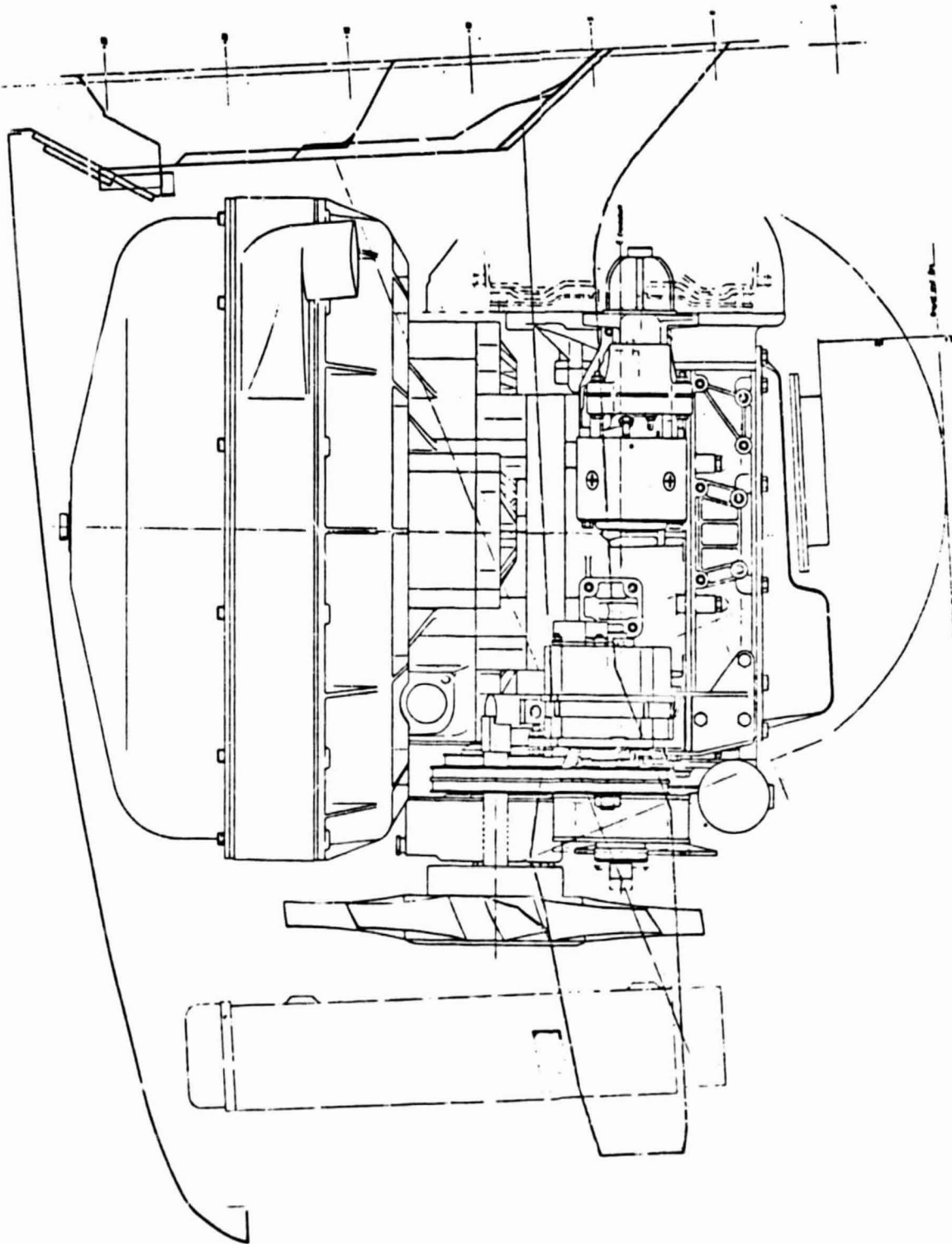
ASE MOD I, Vehicle Interpretation (preliminary installation drawings; only on-engine-mounted systems shown in close to final positions).

0-17034 Engine Installation, ASG MOD I
 - sheet 1: Side view
 - sheet 2: Front view

Note: The starter has been drawn wrong, too close to the crank-case assembly!

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